





The Children's Encyclopedia

VOLUME TEN

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The Children's Encyclopedia*

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THE CRUSADER OF THE COUNTRYSIDE



JOHN WESLEY, RIDING THROUGH ENGLAND, PREACHES AT A LITTLE VILLAGE GREEN

To face Page iii of Volume Ten

THE CHILDREN'S ENCYCLOPEDIA

ORIGINATED
AND EDITED
by
ARTHUR MEE

VOLUME TEN



THE EDUCATIONAL BOOK COMPANY, LIMITED,
TALLIS HOUSE, TALLIS STREET, LONDON, E.C.4

CONTENTS OF THIS VOLUME

GROUP 2

The Lives of the Painters	6673
Great Men of Antiquity	6797

GROUP 3

STORIES

The Enchanted Kettle	6681
Stories Told to the Children of Poland	6683
How the Moon Came to Hawaii	6807
Stories of the Saints	6809
The Legends of Charlemagne	6817
Orpheus and Eurydice	6929
The Fables of Pilpay	6933
King Arthur and His Knights	6941
A Fellow By the Name of Rowan	6949

A full list of Stories is in the Main Index

GROUP 4

ANIMAL LIFE

Queer and Lowly Creatures	6695
The Wonderful Work of a Worm	6825
The World of the Protozoa	6955

GROUP 6

FAMILIAR THINGS

How the Cinema Came	6703
The Story of the Clock	6831
National Flags and Emblems	6961

GROUP 7

WONDER

A Diamond and Its Story	6718
How Far Can We See ?	6719
What Do the Words on a Weather Map Mean ?	6721
What are the Rules of the Road ?	6837
What is the World Like at the Poles ?	6846
How Does Traffic Work its Own Signals ?	6850
Making Weather For a Factory	6853
Are the Birds the Farmer's Friends ?	6855
Must All Things End ?	6981
What are Logarithms ?	6983

Other Wonder Questions are in the Main Index

GROUP 8

ART

The Craftsmen and Their Work	6731
Digging Up the Ancient World—I	6859
Digging Up the Ancient World—II	6985

GROUP 11

COUNTRIES

The African Continent	6741
Egypt and Its Long, Long Story	6873
Central and South America	6999

GROUP 12

Maps and Pictures of Africa	6755
People and Towns of Egypt	6879
Maps of South and Central America	7023

GROUP 13

POETRY

Adonais	6765
How Horatius Kept the Bridge	6883
Wordsworth Recalls His Childhood	7031
Other Poems and Rhymes are in the Poetry Index	

GROUP 15

LITERATURE

The Pilgrim's Progress	6781
In Memoriam	6909

GROUP 17

THE BIBLE

The Twelve	6787
The Winning of the World	6915
Christianity in the World	7053

GROUP 18

THINGS TO MAKE & DO

The Story of Our English Dances	6793
The Puzzle of the Broken Plate	6794
The Right Way to Slide and Skate	6795
Scenery for Your Model Railway	6796
Simple Leatherwork	6923
A Paper-Knife Made in Plastic	6925
Hints For the Young Rider	6925
Pigeons and How to Keep Them	6926
Boats Any Boy Can Make	6927
How to Play Rounders	6928

GUIDE TO KNOWLEDGE

World Facts and Figures in Table Form	7059
Astronomy Tables	7061
Four Hundred Inventions and Discoveries	7062
350 Abbreviations in Everyday Use	7066
Physiology Tables	7068
Weights and Measures	7069
The Quickest Way of Finding Things	7075

CHILDREN'S ENCYCLOPEDIA ATLAS

The World	Colour	7077
England		7109
Guide to 10,000 Places		7153
The Waterways of England		7177

INDEX OF THIS WORK

Poetry Index	7199
General Index	7219

The Story of Immortal Folk Whose Work Will Never Die



Velasquez



Titian



Murillo



Holbein



Tintoretto



Botticelli

THE LIVES OF THE PAINTERS

THE great painters of Europe belong to all time. Their lives come in and out of the story of Europe graciously and beautifully, like their own pictures, giving us a glimpse of humanity both strange and familiar, of hopes and ideals that are as real today as they were five hundred years ago.

English people feel that they have a peculiar claim on Holbein, one of the earliest of these men of genius. He was born in Augsburg in 1497, the favourite son of his father, who was also a painter and also called Hans. It was an ideal family for a genius to be nourished in, the father and uncle and other members engrossed in art, gladly passing on to the young Hans such gifts as they had.

When Hans was about eighteen he went with his brother Ambrose to Basle, looking for work. Very soon after his arrival he had the good fortune to meet the scholar Erasmus, who asked him to do some pen-and-ink drawings for one of his books. Hans, delighted to have a commission, worked hard at the illustrations, and in his spare time painted anything that came handy. He wandered about a good deal, studying people's faces, with never quite enough to do. His wanderings presently took him over the border into Switzerland, where he

had a few commissions and stayed a little time. In 1519 he was back in Basle. He married and settled down to work.

At first there were plenty of commissions, and the years slid by. Then came a season of political and religious unrest, and no one wanted any pictures. After a long talk with his friend Erasmus, Holbein took a bold step. He put his brushes and paints and a few garments into a wallet and in 1526 came to England.

Erasmus had given him an introduction to Sir Thomas More. The painter had come at the right moment into a country apparently destitute of artists. He began painting portraits. "The century of Holbein" began. His success was assured. For three years he painted indefatigably, and then returned to Basle with a picture of Sir Thomas More's family for Erasmus, and enough money in his pocket to buy a house for his wife and family in Basle. Unhappy times came then, the flight of Erasmus, and grave religious trouble.

The next year, after a little work in Basle, Holbein was back in England, to make some more money. There also he found changes of a political sort, and Holbein was glad to find patrons among the merchant goldsmiths in the City. Presently chance brought him, in 1534, in contact with Thomas Cromwell, and

through his influence Holbein was very soon at Court, painting those wonderful pictures which mark out that generation from any other. He drew portraits of Henry the Eighth and his wives, and also went abroad to execute commissions.

During these journeys he managed to visit Basle again, this time in the splendour of silk and satin clothes. Not many more years were left to this painter, who was not the only great artist, as we shall see, to play the part of King's messenger.

In November 1543 one of the recurrent plagues visited London. Holbein died after a couple of days' illness, a young man in his prime, with his work half done.

The next great figure that crosses the stage of northern Europe is Peter Paul Rubens, a descendant of a long line of Antwerp burghers, who was born at Siegen in Westphalia in June 1577. His father died when Peter was ten. A year later the widow brought her children to Antwerp and settled down there. Peter Paul was sent to school, and before he left was able to speak seven languages fluently.

THE DUKE WHO GAVE THE YOUNG RUBENS HIS CHANCE

This lad of many tongues was gifted with a charming personality. "That amiable Rubens" he remained throughout his life. His mother had intended him to become a lawyer, but Peter Paul managed to make her change her mind.

For eight years he laboured in the workshops of the painters of distinction in his day. Then he got the heart's desire of his youth. One fine morning in May, in the year 1600, this handsome young man rode out of Antwerp bound for Italy. His first stay was at Venice, where he painted hard and studied the work of famous men. It happened that he became friendly with a nobleman of Mantua, who presently invited him to Court. The result was that the Duke of Mantua, who loved art and all beautiful things, recognising Rubens's genius, made him Court painter, and was very good to him, sending him here and there to study. He was sent into Spain with presents for Philip the Third and the Duke of Lerma.

Among the gifts were some pictures painted by Rubens, and a gay carriage with seven Neapolitan horses. Unfortunately, the voyage fell in a period of storm, and the Duke's gifts suffered somewhat from twenty days of ceaseless rain.

Rubens's pictures were almost ruined. The audience with the king was delayed while Peter Paul re-painted them.

For some time Rubens stayed in Spain, working for the Duke of Lerma; then he went back to Mantua for two more years, working feverishly. In 1608 he heard that his dear mother was ill, and he set off immediately to Antwerp. The good widow was no longer alive when her son, now a man of thirty, rode back into the city. Grief at her death made a dark place in Rubens's life for several months. Then he was swept into the deep current of his work again, as painter to the Archduke Albert. About this time he married Isabella Brant, whom he painted so often.

THE WORDS OF WISDOM ON THE ARCHWAY OF THE HOME OF RUBENS

During the years that followed Rubens built himself a house of which only the garden archways remain. On one of them are chiselled some lines from Juvenal that Rubens loved, beginning:

A healthy mind in a healthy body is a thing to be prayed for.

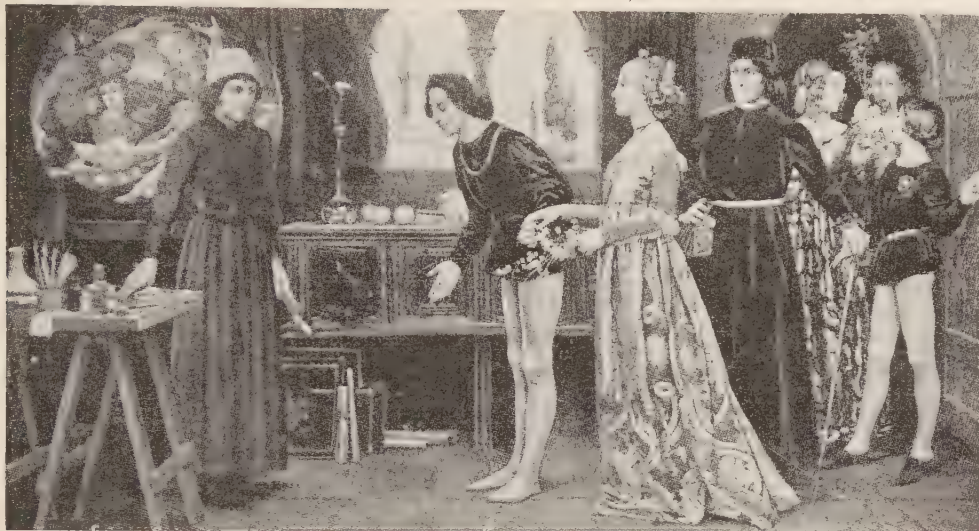
The grand house, something like a Renaissance palace, was really a simple home worked on the most regular system. Rubens rose at five o'clock, winter and summer, went to church, and came back straight to work. One simple meal broke the long labours of the day. Sometimes Peter Paul went for a ride on one of his Spanish horses—his only exercise. His evenings were given up to his friends. Rubens's house became a centre of learning and culture in the Flemish city.

The ten years that passed thus were the fullest and richest of his life. The death of the fair Isabella in 1626 broke the charm his home had for Rubens. After that he was glad to divide his time between painting and travelling.

THE GOOD NAME THAT IS BETTER THAN RUBIES

Some important diplomatic missions sent the painter during the next few years up and down the high roads of Europe, the guest first of one Court and then another. He was knighted by both Philip the Fourth of Spain and Charles the First of England, who were at one in this, that they loved art. The University of Cambridge made him an honorary Master of Arts. But better than all honours heaped on him is the testimony of Lord Dorchester: "Rubens is known among

BOTTICELLI, REMBRANDT, AND RUBENS



BOTTICELLI RECEIVES VISITORS IN HIS STUDIO—FROM THE PAINTING BY
ELEANOR FORTESCUE-BRICKDALE



AN OLD LADY SITS FOR HER PORTRAIT
BY REMBRANDT



RUBENS'S PORTRAIT OF HIMSELF
AND HIS WIFE



MARIE MEDICI VISITS THE HOUSE OF RUBENS

us as too honourable a man ever to tell an untruth."

In 1630 Rubens married Helena Fourment, and tried to patch up the remnants of his home happiness. Work there was in plenty, and more ambassadorial missions. Rubens now had a large country house as well as a town mansion. To his last years he laboured like a giant, his love for his painting unmarred by the fact that he was now rich enough not to have to do another stroke. His children grew up around him and his old years were happy. He died of heart failure in May 1640.

REMBRANDT'S LIBRARY OF FIFTEEN BOOKS AND AN OLD BIBLE

Rubens, destined throughout his long life to greatness and success, was far removed from humble Rembrandt, whom Europe now delights to honour. This painter's real name was Rembrandt Harmens van Rijn, and he was born in 1606 in Leyden, a town prettily called by one old writer the eye of Holland.

His father was a miller. Rembrandt was sent to school as a preparation for the University, but owing to his dislike for study the idea was abandoned. Rembrandt never became a great scholar, like Rubens. When he was a grown man his library consisted of fifteen books and an old Bible. Whatever else he left unread, Rembrandt loved his old Bible.

The good miller sent his gifted son to various masters, and presently people were declaring that he was ready to set up practice as a portrait painter anywhere. He removed from Leyden to Amsterdam, where he lodged in an art-dealer's house, and met Van Uylenborch, the lawyer, whose daughter Saskia he married.

THE GREAT SORROW THAT CAME INTO THE LIFE OF REMBRANDT

The young portrait painter began very well indeed, with a house of his own and money to spare. It is estimated that he was earning from £5000 to £6000 a year during his early married life. Unfortunately Rembrandt was not a good business man, and although for ten years his success continued almost unbroken, his affairs soon became very disordered. Also he had a passion for buying beautiful things. His house became a small museum.

Eight years after his marriage Saskia was dead, leaving one boy, Titus, a delicate lad, who did not live to reach maturity. After his sad loss Rembrandt's home life

broke up miserably. Titus, the child of his golden years, retained his father's love, but the artist's affairs went from bad to worse, ending in 1656 in bankruptcy. His grand house was sold; he was very glad to make a home in a humbler place.

Rembrandt never ceased working, but his art became unfashionable. Prices sank and sank. A mass of troubles fastened themselves like hornets on the artist.

In all these changes his industry never ceased. How much labour he got through it is difficult to say, but of his preserved works we can count about 650 oil paintings, 2000 drawings and studies, and 300 etchings. It is very sad to think that when this man of industry died in 1669 he was what we should term an undischarged bankrupt, with no personal property save his clothes and his painting materials.

Rembrandt was always a humble, quiet, home-loving man, happier with his inferiors than those of higher station. His life is singularly like one of his pictures, with a little golden light backed up by masses of impenetrable shadow.

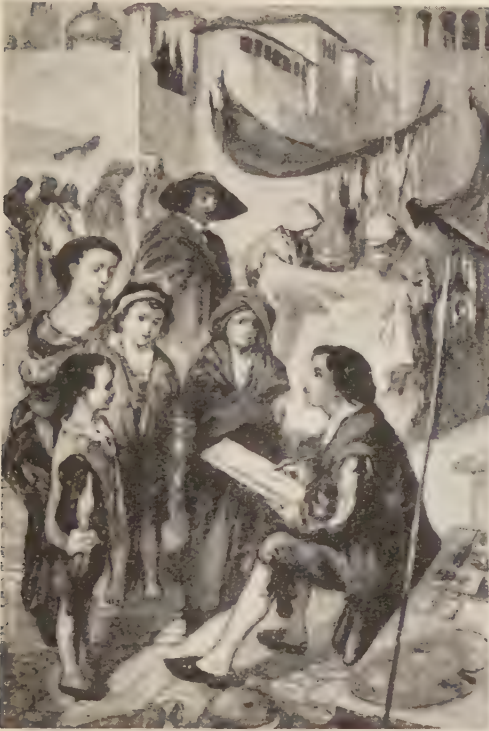
It seems like coming from a place of storm into the sunlight to think of artists of the south, like Botticelli, Titian, or Tintoretto.

THE NICKNAME BY WHICH A GREAT PAINTER IS KNOWN TO THE WORLD

Botticelli, the earliest of these three great ones, was known by an interesting nickname. His father, a Florentine tanner, was called Alessandro di Mariano dei Filipepi. He had four sons, of whom Sandro, born in 1444, was the youngest. The eldest, Giovanni, became a leather merchant. Outside his shop hung a little barrel, a botticello, the sign of his trade; he was also rather round in figure. From one association or another he came to be known as Il Botticello, and when the younger man rose to eminence he was at once labelled Sandro Botticelli.

Sandro was a delicate, nervous, dreamy lad; he hated his sums and his books, was restless, unhappy. The tanner took him from school and apprenticed him to a goldsmith. But even then he was not content. A chronicler of Italian painters, Vasari, says, "The boy was enamoured of painting, and opened his heart freely to his father who, seeing the force of his inclination, took him to Fra Filippo, a most excellent painter, in order that Sandro might learn from him."

THREE OF THE WORLD'S CHIEF PAINTERS



THE YOUNG MURILLO PAINTING CHILDREN IN
THE MARKET-PLACE OF SEVILLE



SIR THOMAS MORE TAKES THE GREAT ARTIST
HOLBEIN TO HIS HOME IN CHELSEA



PHILIP OF SPAIN PAYS A CALL ON VELASQUEZ—FROM THE PAINTING BY FRED ROE

The apprenticeship took place when the boy was about sixteen. For several years he worked for the Friar, who loved him dearly. In due course he opened a workshop of his own, and became one of the foremost painters of Florence. He still lived in his father's house. There is something patriarchal in the glimpse we get of the family about 1480. The old tanner, aged 86, is head of a household of twenty souls, the three sons and their children, and Sandro, who "works in the house when he chooses."

HOW BOTTICELLI WAS INFLUENCED BY THE PREACHING OF SAVONAROLA

In 1481 Botticelli's fame had reached Rome, and he was summoned by the Pope to do some work there. For two years the artist stayed in Rome, painting his famous pictures, and the Pope paid him liberally. But Sandro was of a careless, happy-go-lucky disposition, very generous with his friends, and he did not bring much of the Pope's money back to Florence. He stands out in the picture made by the letters and records of his intimate friends as a gentle soul, full of stray sympathies, fond of children (he never married), with a boundless enthusiasm for great ideals.

In 1489 a change came over Botticelli. He fell under the influence of Savonarola, the great preacher, whose eloquence shook gay, self-seeking Florence to her foundations. He turned his whole thoughts to religion, meditated more, prayed more.

The next milestone in the painter's life was the death, in 1491, of Lorenzo the Magnificent, who had been friend as well as patron. His son Piero was an unworthy successor; Sandro was glad to have nothing to do with him.

As the painter neared old age sadder years seemed to follow each other. Savonarola's terrible death made a bitter impression on his soul, and religious subjects were more engrossing to him than ever. People gathered in his studio to talk about theology and Savonarola.

THE GENIUS WHO REACHED HIS PRIME AS BOTTICELLI PASSED AWAY

Sandro was now a most important painter, looked up to by all, from his friend Leonardo da Vinci to his favourite pupil Filippino Lippi. Towards the end he became infirm, unable to stand without crutches, a mere shadow of his former self. The death that came in May, 1510, was a release to his gentle spirit, which had

never ceased to respond to the beautiful and good impulses of life.

While Florence was mourning Botticelli a man was nearing his prime whose name and fame have since gone to the ends of the earth. This was Tiziano Vecelli, generally known as Titian. He was born about 1477, at Cadore, in the Venetian Alps. When he was only ten years old he left his mountain home to stay with an uncle and learn a trade in Venice. Fortunately for the world the trade chosen was painting.

Titian studied with Gentile and Giovanni Bellini, and with Giorgione. Little is known of him until he suddenly emerges, a master, painting frescoes, and it appears that his fame had already spread over Italy. The death of Giorgione in 1511 left Titian without a rival; the world was at his feet.

It is a pity that the records of Titian's family life should be so scanty. We know that he married a fair girl called Cecilia, and that he had two sons and one daughter. Most of his biographers have been so busy explaining Titian's greatness in art that they have forgotten the little human touches that change a genius into a man. Cecilia died in 1530. To console himself the artist took to travelling.

THE OLD ARTIST WHO HAD NO RIVAL IN ALL ITALY

Presently he was back at Venice, and he began that life, more like that of a prince than a painter, which was natural to one of his temperament. He had a grand house and combined a happy way of living with extreme industry, and appeared to condescend when he took pupils. He could afford to be proud and lofty; he was without a rival; he knew that there was in Italy no prince, or pope, or beautiful woman who did not long to be painted by him.

At sixty Titian was still working, hale, hearty. Life appeared unending for this man favoured of destiny. He went here and there, to Rome at the carefully worded request of the Pope; and then, at the invitation of the Emperor Charles, he crossed the winter alps to Augsburg to paint some pictures. This journey was made when he was seventy. More honours were heaped on him. He returned to Venice a Count of the Empire. Generations seemed to pass him by. At 88 he was still painting. When at last he laid down his brush it seemed that he might

still take it up again. Kings and princes came to visit him; he was Italy's darling. When 99 he died of the plague in Venice; and although a law had been passed to bury plague victims outside the city, a special exception was made in his case. Plague or no plague, even in those terrible hours of anxiety, the city on the sea paid the final tribute to its greatest genius. He was buried with public honours in the church of Santa Maria dei Frari.

Titian it was who introduced to art the famous son of a dyer remembered today as Tintoretto, of whom we read elsewhere. We may go on now to read of an immortal Spaniard who came into the world 21 years after Titian left it, a man who was destined to carry the honours of art from Italy to Spain. This was Diego Rodriguez de Silva y Velasquez. He stands apart in the story of European painters, seeming to be free from the artistic rivalries that marred so many lives.



RUBENS'S PORTRAIT OF HIMSELF, IN THE UFFIZI GALLERY FLORENCE



REMBRANDT'S PORTRAIT OF HIMSELF, IN BUCKINGHAM PALACE, LONDON

Velasquez was born in Seville in 1599. He was the child of gentle, cultured people, and neither poverty nor opposition touched his youth. When he was a small boy he announced that he wanted to become a painter; a painter he became. He studied with Herrera and then Pacheco. The five long years spent in the house of Pacheco were very happy.

Velasquez looked back on the peace of those years when he became a powerful presence in the Spanish Court. He married his master's daughter Juana, and but for ambition would have been content to stay in Seville painting, reading, enjoying life in that cultured household. But ambition sent him presently to Madrid with an important picture that is now world-famous, the Water-Seller.

Philip the Fourth had an eye for genius in art and letters. Velasquez was made Court painter, and began that series of the portraits of Philip and his

family which have given the world an amazing insight into the character and home of one of the great princes of Europe.

In the summer of 1629 the painter set off on his travels to Italy, and there refreshed himself greatly with the study of other people's work. Four years later he was back in Madrid, more of a favourite with the king than ever. Velasquez settled down to a life that was a mixture of artist and confidant. He saw the king every day, and became his friend.

THE EAGLE IN THE HIGH PLACES AND THE ANGEL IN THE SHADOWS

The years were broken by other journeys to Italy. As the seasons fled it seemed to the painter himself that Velasquez was less and less an artist and more and more a courtier. He could seldom spend an hour alone in his studio. Such was the fate of a man selected to be the favourite of an egotistical and most powerful king. His duties were more arduous than one would think, his health was not good. He died in 1660, at 61.

Murillo and Velasquez follow each other across the stage of Spanish art, contemporaries and yet as divided as the poles. Velasquez has often been called the eagle in art, dwelling in lofty places, Murillo the angel in art, hovering in quiet shadows among little children.

Murillo's real name was Bartolomé Esteban. He was born in Seville on the last day of the year 1617. His parents were humble workpeople and lived in the Jewish quarter. Among these mean, narrow streets, where awnings kept out the fierce glare of the sun, Murillo played and worked till he was ten.

That year a swift and terrible plague carried away both his parents. From these scenes of sordidness and poverty the lad was rescued by an uncle, a doctor who lived in a better part of Seville. The uncle was kind, but poor himself, and could not afford to give the lad a decent education.

THE EARLY YEARS OF STRUGGLE OF A GENIUS IN SPAIN

Murillo had already shown his bent in making drawings on whatever material came handy, and to his intense delight the uncle found him a place in a second-rate artist's studio. The boy had to grind and mix paints, stretch canvases, and act as general odd-job boy in the studio. In his spare hours he drew, and drew incessantly. Here Murillo stayed till he was 23.

Then a change came. His master left Seville and Murillo remained there, facing the uncertain problem of making a living and supporting his younger sister. Murillo had no money, no friends, no influence. There were many days when the two had not enough to eat.

Murillo did everything he could to make a living, painting gay, impressionistic pictures on squares of loosely-woven material called *saga-cloth*, and selling them himself in the weekly market in the Macarena, the slum district of Seville. He always took his materials with him, and sometimes he would paint one of these pictures while his customer wandered about the fair or dozed in the shade. Here the artist studied to his heart's content the happy, care-free children he painted so beautifully later on.

After a while Murillo was seized by a great desire to see the work of the artists of Europe. He painted a great number of pictures on squares of *saga-cloth*, and sold them to a man who was going to South America. Then, first taking care that his sister was left in good hands, Murillo took his money, and in 1641 went to Madrid and found Velasquez.

THE HELPING HAND VELASQUEZ GAVE TO HIS FRIEND MURILLO

The great Court painter did not mind associating with a black-haired, shabby-looking tramp. He gave him a room in his own house and arranged for him to see the work of great painters in the Madrid galleries. Three years Murillo spent in Madrid, copying, studying. Then he returned to Seville, and suddenly, miraculously his fortune was made.

He became a favourite, and could not paint pictures fast enough. In 1648 he married a beautiful and highborn lady, and the poor boy of the slums became the head of a grand house. From strength to strength the painter went, gaining more and more favour in the eyes of his generation.

In 1660 Murillo founded the Academy of Seville. The seasons were filled with happy, ceaseless work. Twenty years later he fell from a scaffolding while painting a picture in a church in Cadiz, was brought home to Seville, and died there in April, 1682. He shares with Velasquez the love of the Spanish people and the admiration of the whole world.

The Great Stories of the World That Will Be Told for Ever



THE ENCHANTED KETTLE

MANY think that there is something supernatural about foxes, cats, and badgers. But while foxes and cats are often evil spirits in disguise, badgers are only possessed by Puck-like spirits who love practical jokes.

Often a traveller has been startled at hearing a noise of drums in the wood, and has come upon a badger, standing on his hind-legs and playing a tattoo on himself. The poor man runs away, and hears the badger laughing.

Once upon a time there was a priest who had an old kettle which had made him many fragrant cups of tea. A day came, however, when the head, legs, and tail of a badger sprang from its sides, and it leaped off the fire. Round and round it ran, and then began to fly about the room. At last it settled on the floor, and the badger parts disappeared. The priest, shaking with fright, shut it up in a box.

Next day a poor tinker came to the village where the priest lived.

"Now I can get rid of my useless, horrifying kettle," thought the priest.

The tinker was very glad to buy it cheaply and the priest chuckled at the trick he had played on the man.

That night the tinker was awakened from sleep by a noise in the sack where

he carried his poor belongings. No sooner was it opened than out rushed the badger-kettle, and immediately started to gambol joyfully all round him.

The tinker was not frightened, but laughed at the badger's antics. Then he thought, "If I laugh, why shouldn't others?" So he set himself to teach the queer creature tricks.

Soon he became famous as the travelling showman who had a kettle with badger's head and limbs, which walked the tight rope and danced Japanese measures with a fan in his paw. Noblemen and princes bade him perform at their palaces, and soon the tinker had made a modest fortune. Then he said to himself, "I must not be avaricious. The priest who sold me the kettle so cheaply did not know what a wonderful thing it was. I must give it back to him."

This made him sad, for the kettle-badger was a great pet to him, but he did it. Of course the priest had heard all about its adventures long ago, and learned that he need not have feared it. So he was glad to have it back again. But from that day onward it remained quite an ordinary kind of kettle. The badger head, legs, and tail never sprouted again. It was of no use except for boiling water.

PRÊTE À MOURIR POUR SON AMIE

This is a French translation of the story told in English on page 3134

Qui était Sydney Carton ? La réponse est —Henriette Cannet.

Même ceux qui n'ont pas lu "A Tale of Two Cities" savent ce dont il s'agit ; Sous la Terreur Sydney Carton change de vêtements avec un condamné à mort. Le condamné retourne à l'amour et à la liberté ; Sydney Carton meurt à sa place.

Nous sommes familiarisés avec une partie de l'histoire de Madame Roland, mais non avec le rôle qui concerne Sydney Carton. Nous savons que Madame Roland était une femme de haut mérite, qui, avec son mari, accueillit avec joie la Révolution Française, parce que tous deux haïssaient la tyrannie et les souffrances causées par l'ancien Régime. Mais, lorsque cette belle promesse de fraternité se changea en torture et en carnage, ces deux citoyens courageux protestèrent. Madame Roland fut condamnée à mort par ceux-là même que son influence avait contribué à amener au pouvoir.

Tandis qu'elle était en prison, une amie vint lui dire adieu. Dès que le geôlier fut sorti, cette amie supplia Madame Roland

de changer de vêtements avec elle et de s'échapper. Elle lui dit que c'était son devoir de vivre pour son enfant et pour son mari, pour les services qu'elle pourrait rendre à la France avec son intelligence et son influence sur les hommes éminents de l'époque. Sa vie était beaucoup plus précieuse que celle de l'amie inconnue qui l'interpellait.

Or, cette femme qui suppliait Madame Roland de vivre pour la France et pour son foyer était Henriette Cannet, une ancienne amie de pension.

Madame Roland refusa d'accepter ce sacrifice. Regardez-là gravissant les degrés qui mènent à l'échafaud, vêtue de blanc, sa chevelure noire éparse sur ses épaules, ses yeux intrépides fixés sur le peuple ignorant dont elle avait essayé de briser les liens, et qui réclamait son sang à grands cris parce que ses oppresseurs l'incitaient à le faire. Sous ce tableau on devrait toujours graver ces paroles immortelles, qu'elle prononça au moment d'affronter la mort : " O Liberté ! que de crimes sont commis en ton nom ! "

THE QUEEN WHO GAVE UP HER BOY

NEAR the beginning of the sixteenth century there was born at Fontainebleau Jeanne d'Albret, heiress to Navarre and niece to the King of France.

She hardly knew her parents, but was brought up in the country by her governess, and until she was nine she did not realise that she was kept a prisoner by King Francis in a castle on the banks of the Loire. This the king did that when she was quite a child he might compel her to marry a Protestant duke. Little Jeanne was unwilling to marry the duke the king chose, and was glad when the Pope annulled the marriage, and she was free to wed as she chose.

During the peaceful years she spent at Pau Jeanne studied and learned to love the religion of the Huguenots, the persecuted Protestants of France, and she devoted herself to their cause. On the death of her old father she became Queen of Navarre, and while dark clouds were gathering round the Huguenots she helped and encouraged them all she could.

The homeless and persecuted were ever welcome at her Court, which grew to be looked on as a haven of refuge by the

sorely-troubled Huguenots. When their leader, the Prince of Condé, fell in the battle of Jarnac, and hope seemed dead, the faithful Queen of Navarre came to their aid. She rode into the camp among the despondent soldiers, bringing with her two fine bright boys—her only son Henry, aged about fifteen, and his cousin, the now fatherless Prince of Condé, a boy of twelve, whom she had adopted.

In stirring words she rallied the little army to defend their religion and to avenge the death of their beloved Condé. Presenting the two boys, she cried : " Soldiers, I offer you everything I have ; my kingdom, my treasures, my life, and, more precious than all, my children."

These words were received in breathless silence, and then, as Prince Henry galloped into their midst, the soldiers greeted him with cheers as their leader.

Dark days were before the Huguenots, and to them the sacrifice of the Queen of Navarre seemed vain in the light of after events ; yet who shall say that it was so, seeing that her noble deed revived the courage of the Huguenots, and helped to keep alive their beliefs.

STORIES TOLD TO THE CHILDREN OF POLAND

We give here a few more legends told to the children of Poland as they grow up. Other stories, known to every boy and girl in this land of mountain and forest, are given on page 4366.

LEGEND OF THE GOLDFINCH

WHEN God the Father made our World and covered the ground with lovely carpets of flowers, and made trees to grow into the wonderful temples of forests, He wanted those temples to be filled with music, so He made birds.

He made them big and small and gave them different shapes, and when they were all finished He told them to line up to be painted. So all the big birds stood first and all the little ones were at the end.

And there, among the small birds, was one that was very lively—we call him Goldfinch today. He chirped and hopped and moved to and fro, and could not keep in the line. There was such a long row of birds to be painted before his turn came.

"I must try my wings for a while; it is so tiring to stand and wait," thought the little bird; and he spread his wings and up he flew, up to the little clouds that looked so white and fluffy against the deep blue background of the sky.

He looked down; how beautiful the world was in its new, fresh loveliness! He flew from tree to tree and meadow to meadow and hill to hill, singing with joy and fluttering in the sunshine. He was so happy in this wonderful world.

Suddenly he remembered his coat had not been painted and that he had been away for a long time. He must hurry back. So he flew as fast as he could, and at last he could see the meadow where the long line of birds had been. But now there were no birds to be seen.

God had finished His work, and He had put away His paints and was washing His brushes.

The little Goldfinch sat on a tree and sobbed. God heard him weeping and asked what was the matter. So the Goldfinch told how he had flown away to see the beautiful world, and how he was too late to have his coat painted.

God saw that he was really sorry, so He said, "Come, and I will see what I can do." So, joyfully, the Goldfinch flew to Him. The colours had all been put away, but there were still many little bits of paint on the palette; so God took all the many little scraps and made of them the wonderful coat of many colours that the Goldfinch wears to this day.

THE VIRGINIA CREEPER

IN the beginning, when God made the plants of the Earth, He first made their stalks and leaves; and when these were finished He went on making their blossoms, painting the petals of their flowers in all the loveliest colours.

The flowers stretched their stalks when He was passing by, so that He might notice those that were not yet painted. But there was one little plant growing at the foot of an old, bare rock. She was so small and humble that she did not dare even to look up when God passed by; so He missed her, and her blossom was not painted; it was just green.

The poor little plant felt very sad at first and wondered what she could do. The bare rock at whose feet she was growing complained of the heat of the sun that burned him. The little plant thought: "I will cover him with my green leaves," and she began to grow, and to climb higher and higher until she had covered all the rock.

One day, when the autumn had come, God sent down an angel to see all the flowers that He had made. The angel went along the fields and meadows, and saw many a beautiful thing. At last he came to the big, bare rock which he knew so well, but there was no rock to be seen; a beautiful green plant had covered its bareness.

"How lovely!" exclaimed the angel.

The little creeper heard and blushed. She blushed the most beautiful crimson, more beautiful than all the flowers.

And every year the little creeper remembers the praise of the angel, and blushes again as she thinks of it.

HOW A HIGHLANDER CHOSE HIS WIFE

ONCE upon a time there lived in the Tatra mountains a young Highlander. He was good-looking, witty, and wealthy, so no wonder many girls were fond of him and would have liked to marry him.

But he wanted a good wife, and he knew that good wives are not easy to find. But he made up his mind to find one, so he dressed himself in rags, covered his face and hands with dirt, and went out to look for a wife.

He knocked at the door of one of his girl friends. "Have mercy, good child, have mercy," begged he when she opened the cottage door. "I am a poor man. I have not touched food since yesterday. Give me some bread or some clothing. Look! I am in rags." The girl was moved to tears; she took some bread and some cheese and gave them to him. He thanked her and went away.

But on the way he said to himself, "That is not a wife for me." He tried another place. Again he knocked at the door, and when a little girl opened it he said in a voice half choked with tears: "Help me, sweet child; I am a poor beggar. I am so weary and weak, for I have not tasted food since yesterday. Look at my rags. Give me some food or some clothing." The girl looked into his eyes, and said in a sad voice: "I cannot give you any food because my mother has locked the larder and she is away; but here is an old coat; take it, it will, at any rate, keep you warm."

Off went the Highland boy, thinking, "This is no wife for me."

He came to another cottage, and when he knocked at the door a beautiful girl opened it. He began the same story, complaining of his misery and hunger, but the girl looked sternly into his face. She looked at his shoulders that were straight and broad, she looked at his hands, that were strong, and she said: "I never help loafers. Go and work, and you will suffer neither hunger nor cold." She banged the door in his face, and was gone.

"This is the wife for me," thought the young boy, full of joy. He went home, washed his face, dressed in his best, and went once again to the girl, and asked her to become his wife.

THE SECRET OF THE FERN BLOSSOM

HAVE you ever seen the white blossom of a fern? People say it grows only in fairyland, but I will tell you how it can be found.

Wait till St. John's Eve, June 23, when the tide of life is at its highest, when all the shrubs and trees are in full blossom and the woods are teeming with wild life. That is the time to start on your quest. Go out into the deepest forest and take no companion. However dark the night may seem, fear not, for it is in loneliness and darkness that you may find the blossom.

You will have to cross many a well-marked path, many smooth roads; but keep away from them: they lead to human dwellings where ferns never bloom.

And when you become tired and weary, and your feet are sore and your heart sad, when thorns and thistles block your way so that you are scarcely able to move, then look out for the blossom; it is nigh. You will come upon it quite suddenly, when you least expect it. There it will be at your feet, white and lovely, shining like a star among the leaves of the ferns.

Take it, and hide it in your bosom. From this moment you are the richest man in the world. All the world is yours, with all its bliss and wonder. There is no sorrow now that can reach you, there is no pain that can hurt you, there is no darkness that cannot be lightened by the shining radiance of the blossom you have hidden on your heart.

DOGS, CATS, AND MICE

IN the old days, when dogs and cats and mice lived in perfect harmony together, the dogs asked the cats to keep certain documents of great importance safely till they came back for them.

The cats looked at the pile of old papers, and they thought, "Why should we be bothered with these old scraps of paper? Let us ask the mice to take care of this queer treasure; it is just what they are fit for." So they did, and the mice promised to keep an eye on the documents.

Meanwhile winter came, and a hard winter too. The poor little mice suffered from hunger and cold. Being in despair, they began to nibble at the old documents. They gnawed and nibbled and ate the best parts, and tore the bad ones into tiny shreds, till there was not one whole piece.

At last one day the dogs wanted their documents back, so they went to the cats. But the cats said, "We thought it would be safer to give your documents to our friends the mice, so they keep them. Now we will go and fetch them for you."

So off they went. But instead of the documents they found only scraps of paper lying on the floor.

The cats were furious. They vowed to kill every mouse they ever met in their way. But the dogs, when they heard the sad news, got angry too, and they began to chase the cats, and they have never stopped doing it since.

THE HERO OF KAVALA

KAVALA, which is a seaport on the coast of the Aegean Sea, had been captured by the Bulgarians. When disaster fell upon the Bulgarians they were afraid their army might be surrounded if they maintained their position, and so withdrew the bulk of it, leaving the fortress in the keeping of two hundred men. These men, before leaving to follow the main army, were to burn the town, so that it might not fall into the hands of the enemy.

News of the decision reached the horrified inhabitants. They learned that the soldiers were collecting stores of petroleum; they heard them sharpening their bayonets, saw them loading their guns. The poor people shut themselves in their houses, expected death, and prayed for life.

Only one man did not give up hope. A Turkish fisherman looked out across the waters and saw the island of Thasos, eighteen miles across the sea. There lay the Greek fleet, and Greece was at war with Bulgaria. So when the sun went down, and only the pale stars lit the way across the waters, the brave boatman, creeping in the shadows past the sentries, stole down to the beach, launched his boat, and stole out of the bay, through the searchlights which lit up the waters round about him. His safe escape seemed miraculous. It was, he said, as if a great

hand were stretched above him to hide him from the lights.

With a beating heart and straining muscles he set out to row the eighteen miles to Thasos. Early in the morning he reached the island, glided in among the Greek warships, and cried out to a battleship, "For the love of Allah, and for the love of your God, come quick, for at sunrise the Bulgars sack Kavala."

The answer was immediate. A Greek gunboat got up steam and set out swiftly for Kavala. As the sun climbed up above the horizon the people of the town heard a cry from a watcher on the shore: "The fleet! The Greek fleet!"

Then the inhabitants of Kavala knew that they were saved, for with the Greeks there the Bulgarians would not attempt to sack the town.

Doors and windows were flung open. The people rushed with joy into the streets and down to the shore, and as the captain of the ship that had come to save them stepped ashore they seized him in their arms and carried him shoulder-high at the head of a procession of sailors.

At the back of these stalked a figure in a red fez, stumping stolidly along and nodding contentedly. It was the valiant Turkish fisherman who had rowed to Thasos and brought back the Greek fleet to save the town.

THE BOY WHO SLEPT WELL O' NIGHTS

MANY years ago a farmer needed a trustworthy boy to help him with the work on his farm. In those days there were no Labour Exchanges; men who were out of work used to assemble at the annual fairs, and there the farmers would choose the ones they wanted.

One day the farmer journeyed to a market-place where a fair was being held and began to question the waiting boys.

The first boy said he could plough and reap, the second that he could milk and tend the cattle, the third that he could clip the sheep, the fourth that he could groom the horses, and so on. But the last boy in the line said none of these things. He merely replied quietly that he could "sleep well o' windy nights."

The farmer was so struck by this strange answer and by the steadfast bearing of the boy that he agreed to engage him for a year.

The spring passed and the summer, and the boy worked so well that the farmer was pleased with him and learned to rely on him. Then came the winter.

One night a terrible storm broke over the farm. All night long the lightning flashed and the thunder pealed and the wind howled round the chimneys and the rain poured down in torrents. The farmer shuddered as he lay awake listening to the storm, wondering what damage was being done outside in the fields.

At breakfast he told the boy how he had been kept awake by the fury of the gale. The boy smiled, and replied that he had slept as soundly as ever.

"Why," said the farmer, in amazement, "I could not sleep a wink, thinking of the wind tearing at the tops of the hayricks."

"Oh," replied the boy. "I didn't worry about that. I knew they would be all right. *You see, I put them on.*"

A JAPANESE SPARROW

ONCE upon a time there lived in Japan an old couple who had tamed a sparrow. Every day he came to be fed, and fluttered about their house, sometimes alighting on their shoulders, where, quite at home, he would chirp as though he were on a forest tree.

One day the old woman was in the garden when her bad-tempered neighbour called out: "You won't see your precious sparrow again. He came eating my rice, and I've cut his tongue out." The spiteful woman laughed.

The poor old couple were filled with sorrow. They feared the bird would starve, and they felt sure he would never trust himself near a human being again.

As they could not rest at home they wandered into the woods calling the bird. By and by they came to a clearing. There stood a most beautiful little house, only a few feet high. The sliding door was pushed aside, and out flew their sparrow, followed by his wife and little ones, all twittering a welcome in which the old people could plainly distinguish words.

"How glad I am that my hosts should be my guests!" cried the sparrow. "How happy I am in this enchanted place to be able to tell you how thankful I am for the love you have showed me!"

In and out flew the sparrows, bringing toy-like mats and bowls and cups, which grew quite big as soon as the old couple touched them. They all feasted together in the forest.

At last the old couple said they must return. Then the father sparrow brought two little baskets, which he laid at their feet. "One is heavy and one is light," he said; "which will you have?"

The old people chose the light one, as they were not strong enough for great burdens. After tender farewells they set out again. The basket grew from the size of a walnut to that of a trunk, and when they opened it at home they found it filled with brilliant silks, glittering jewels, all the loveliest things fairy hands could have packed into it.

Their neighbour, hearing their cries of excitement, ran in. As soon as she learned their story she hastened away to the woods. She came to the little house and knocked at the door. Out came Father Sparrow, and looked at her sternly.

The woman said she was sorry she had cut his tongue out, but everyone is apt to lose her temper sometimes! She hoped he would overlook it, and give her a present in memory of their having been neighbours.

Without more ado the sparrow brought out two baskets. The greedy woman chose the heavier, and set off for home.

The basket grew and grew, till her arms ached and her back was nearly broken. Only the thought of treasure enabled the exhausted woman to drag it home. With weary hand she lifted the lid. Out sprang two enormous goblins, who carried her off to the dismal place where those who ill-use animals are punished as they deserve.

THE STORY OF EDITH CAVELL

IN the street on the east side of the National Gallery in London stands a stone figure in nurse's uniform. It is of Edith Cavell, an English nurse.

Being in Belgium in the First World War, it mattered not to her whether she was nursing friend or foe. She was the friend of all who needed her, and even Germans she nursed back to health. But one thing this brave woman could not bear: she could not bear to see the German Army forcing Belgians to work against their country. She could not bear to see these men enslaved by German conquerors. And so she sheltered them, and helped them to escape to Holland or to France.

Edith Cavell risked her liberty in doing so, and one day the Germans found her

out, found her guilty of being kind to suffering people; and for this they sentenced her, not to a short imprisonment, not even to penal servitude, but to death.

The ambassadors of other nations appealed in vain against this savage deed, and one night in the dark a German firing party took this woman to a garden, and shot her dead. She died like a daughter of England. Too proud to feel scorn of her enemies, too noble to hate them, she left this message, which will ring for ever down the ages.

Standing as I do in view of God and Eternity, I realise that patriotism is not enough. I must have no hatred or bitterness towards anyone.

With this noble farewell to the world Edith Cavell reached the gate of heaven.

THE DOOM OF THE CHILDREN OF LIR

FIRST of all came a beautiful woman, riding a grey horse with scarlet harness. Her gown and mantle were of green, embroidered with silver and clasped with jewels. There were bracelets on her arms, and a gold circlet on her black hair.

It was Eefa, second wife of Lir, one of the fairy chiefs who ruled Ireland thousands of years ago, before the invasion of mortals caused them to become invisible and hide in the hills. She was going on a visit to King Bov the Red, and with her she took her three step-sons and step-daughter. She was jealous of them, and

Fionuala, the little girl, stood before her three brothers, who clung to her, trembling before Eefa's furious air. Suddenly the Queen's hand dropped; she could not do the terrible thing. Instead she began to recite a magical curse upon the children.

This was the doom she pronounced on the children of Lir: they were to change into white swans. Three hundred years they were to spend on Lake Derryvaragh, three hundred on the Straits of Moyle, and three hundred on the Atlantic by Erris and Inishglory. After that, when "South weds North," the enchantment would end.



THE PRINCE COMMANDS THE PRIEST TO GIVE HIM THE FOUR SINGING SWANS

her visit was but a pretext to get them away from their father and do them harm.

After her came one or two serving women and a group of men armed with swords. Four of them carried each one a child before him, pretty children, royally dressed.

Presently Eefa called a halt in a desolate place near Lake Derryvaragh. Then, as calmly as if she spoke of fowls or swine, she said that the children must be killed, that she would tell a lie to shield the men who obeyed her, and reward them richly.

Though she was their queen, and powerful in witchcraft, a cry of horror rose from her servants. The wicked woman exclaimed that she would do the deed herself, and took a sword from one of the men.

The Queen ceased speaking, and in the blink of an eye there were no children to be seen, but four white swans, who rose in the air with human cries, and beat their way to the waters of the lake.

Eefa and her servants went on in silence. But as Bov stepped forward to welcome his friend's wife her servants cried to him not to touch her guilty hand, and told him what she had done. Then Bov in his wrath cursed Eefa, and she was turned into a bird with a human head, that flew screaming away, never to be seen again.

Bov came to Lir with his bitter news, and the two set off sorrowfully for Lake Derryvaragh. The four white swans came swimming to them, and greeted their

father in human words. Fionuala did her best to comfort him, and promised she would always protect the little ones.

The people of their race had two lucky attributes: disease and old age never touched them, and they were great musicians. Fionuala, Conn, Fiachra, and Hugh were even more skilful in melody than their kinsmen, so for three hundred years people flocked to Derryvaragh to hear their singing, and Lir talked with his children daily.

At last the time came when they must accomplish their doom, and fly to the Straits of Moyle. They left their father with heartrending cries, and the wailing of a whole people followed them.

Now, on the straits between Ireland and Scotland, they suffered from tempest and cold, tumult and loneliness, till they would have been glad to exchange their lot for that of some fish with only a few days to live before sea-gull or sea-cannibal put an end to him. But in the icy waters, buffeted against the rocks, their love survived to comfort them. Fionuala, the motherly sister, would spread her wings over the others, would cheer them with stories of the happiness in store at the end of the doom, and would sing to them.

When this period was accomplished they left the half-frozen seas for the western shores of Mayo. One day as they were floating there they saw a young man walking on the sand. He was amazed at seeing them, and still more astonished when they called to him in human voices. But he approached bravely, and answered the poor birds, who were eager to have news of their father, King Lir.

"Alas!" said he, "I never heard of him. I am a poor farmer and have never travelled more than ten miles from the place where I was born."

He was an unlearned man and knew nothing of history, or he could have told them that a new race dwelled in Ireland, and their father's kin now went about invisible, and lived in the hills.

One day the four swans took wing and flew to their old home. With cries of lamentation they circled round and round the hill where their father's palace had once stood, and where there was nothing now to be seen but nettles and thorns. Bewildered, and more unhappy than they had ever been, even in the Straits of Moyle, the poor swans returned to Erris Bay.

The farmer befriended and protected them in many ways, but he grew old, and died. Years passed, and one day the birds were startled by a thin, strange sound coming from the land. At length curiosity overcame fear, and they flew to see what it was.

They found a missionary ringing a bell in a little stone church he had just built. The good man listened pitifully to their story, and then told them the good news he brought to Ireland.

"Brothers," Fionuala said, "my heart tells me this is a true tidings. Let us learn of this gentle-hearted man."

So the swans became friends of the hermit, and sang the holy service, till the news of it spread far and wide.

One day a Princess of Southern Ireland was wooed by a Northern Prince. She said she would marry him if he brought her the four singing swans of Erris Bay.

The chieftain never stopped, except to change horses, till he reached the church. Once there he demanded the swans, and, on being refused, took them by force. In vain were the old missionary's entreaties: they were chained together and dragged off.

The faithful priest followed as fast as he could, in the hope of being able to serve his friends. The chieftain, cumbered by the birds, did not outstrip him by very much.

The last moment of the three hundred years passed as the swans were brought to the Princess's feet. Suddenly the Prince's chains fell from them, and their swan plumage also. There stood four shrivelled, shrunken old people. They looked at each other with amazement.

All fled, but the hermit drew near, and the peasants say that he comforted them.

"Friends," he said, "I think you have not long to live here, but in the gardens of Paradise, where you shall live together for eternity, you will find peace to atone for all your sufferings."

So he baptised and blessed them. Then said Fionuala, with the holy water wet on her white hair, and the weakness of death coming upon her:

"Lay us in one grave: lay Conn at my right, and Fiachra at my left, and Hugh before my face; for there they were wont to be when I sheltered them in many a wintry night on the seas of Moyle."

This much was merciful in the doom of the children of Lir: they died all in one hour, and knew not separation.

SON-OF-A-PEACH

THERE was once a poor old Japanese couple who suffered greatly from want, for they had not strength and health enough to do much work.

Often they wished for sons and daughters who would have helped them. One day the old woman was washing clothes in the stream when she saw an immense peach floating towards her. She drew it in, delighted to think what a good meal it would make her husband, for it was nearly as big as a melon. However the fruit burst open, and there lay a lovely little child.

The old woman's joy knew no bounds, for she saw that Heaven had taken pity on them and sent this child to comfort their old age. The old man was equally rejoiced, and called the newcomer Son-of-a-Peach.

He grew ten times faster than other children, and every tree he touched seemed to bear ten times as much fruit. The poor little garden flourished like a king's when he began to tend it. Best of all, he was so sweet-tempered, so cheerful, so unselfish, and so brave, that everyone loved him.

One day he said to his father:

"I have heard of an island not far from the mainland where a band of goblins live. They make raids on the country and carry off children. They plunder and kill. I should like to go and fight these wicked monsters."

The old man's heart sank at the thought of losing his son, but he said to himself:

"He was sent by Heaven, and perhaps it is Heaven's will that he should deliver people from the goblins. I have no right to hold him back."

So he gave Son-of-a-Peach permission to go, and some money for the journey. It was not much; the boy spent it all on provisions, and set off on foot.

At the end of the first day's journey he sat down in a wood to eat his supper. A big dog jumped out of the undergrowth, and said: "If you don't give me food I will tear you to pieces!"

"If you threaten me," replied the boy calmly, "you shan't have a crumb, but if you ask civilly, I shall be pleased to give you half my ration."

"Please, honourable sir," said the dog, with a bow, "give a hungry fellow a cake, and tell him where you are going."

When Son-of-a-Peach told him what he proposed to do the dog said:

"That's an adventure after my own heart. Let me come as your squire."

Son-of-a-Peach agreed, and they slept side by side. At the end of the second day's journey, as they were talking of their plans, a monkey dropped out of the tree above. The dog sprang at him, but Son-of-a-Peach pulled him off, and the monkey cried that he had heard their conversation and wanted to enlist in the expedition. The dog growled jealously that they wanted no mischievous apes, but Son-of-a-Peach said he might come.

Soon after a pheasant flew down to pick up the crumbs of their supper. The dog flew at him and pulled out two tail feathers before the boy could catch him. The pheasant sprang to the boy's shoulder, and said pleadingly:

"Let me come with you too. I shall not eat half so much as your other companions, and I can show you a short cut to the island."

So next day the boy and his three retainers arrived at the shore. Quite close they could see the lovely island and the fortress of the goblins.

First of all Son-of-a-Peach went to the nearest village and asked for the loan of a boat and a sword. Seeing his strange company, the people thought he must be something supernatural, and dared not refuse. They soon rowed off, and landed on the goblin island.

After hiding their boat in a cave they advanced cautiously. Presently they heard weeping, and saw two lovely maidens washing linen in a stream. Son-of-a-Peach did not dare to speak to them in case they should be startled and cry out, so the pheasant fluttered up and whispered gently:

"Why are you weeping, maidens?"

"Once we lived in palaces," one replied, "but now we are slaves to the four demons who live in that fort."

"I and my comrades," said the pheasant importantly, "have come to deliver you. Tell us, how would it be best to attack your wicked masters?"

"Come to the fort at dusk," said the maiden, "when the demons are sleepy with wine and food. We will open the side door to you. Pray Heaven you do not fail, for if you do I shall have to make

a pie of you, and it would break my heart to do that !”

“We are invincible, never fear,” said the pheasant, and returned to his friends.

The four lay in hiding till dusk. They saw lights in the fort, and heard music. One of the slaves was playing to the demons. The door was ajar.

In they rushed. The dog sprang at one demon's throat, the ape strangled another, Son-of-a-Peach cut off the head of a third, and the pheasant pecked at

another one's eyes so that he was helpless, and the boy soon killed that monster too.

The castle was full of treasure, which Son-of-a-Peach gave to his old parents. He took the maidens home to their royal father, who made the four rescuers noblemen. Then for the rest of their days they wandered about Japan slaying monsters and helping the weak, till every one of them was as famous as Jack the Giant Killer. But the dog never quite got over his jealousy.

THE BOY AND THE AMBASSADOR

DURING a very wild and dreadful period in French history called the Commune, when cannon were firing all day long in the streets and it was unsafe to stir abroad, Mr. Edward Mallet was acting as British Ambassador in Paris.

One day as he passed the window of his office he glanced down at the courtyard below, and noticed a little shrivelled boy staring pathetically up at the windows. Later on, passing the window again, he saw the little boy still there, and, being struck by his presence in the courtyard of the Embassy, he rang a bell and sent one of his secretaries to inquire what he wanted.

He learned that the boy had asked for the Ambassador and had refused to tell any of the secretaries what he wanted. It seemed an absurd thing to do, but the Ambassador ordered the little urchin to be brought to his room.

The boy was neatly dressed, and his manner was perfectly composed. He seemed to be about eight years old. It amused the Englishman to notice that this tiny French child had all the confidence of a man of the world.

He told his story quite simply. He lived with his mother and two servants in an avenue where there was always fighting, and the dreadful scenes were making his mother very ill. “I take care of my mother,” he said. “There are two woman servants, but they are no use; they are more frightened than we are.” He wanted to move his mother to a quieter part of the city, but could not do so because they had no money. He needed about twenty pounds. When the postal service was working again properly he would be able to pay back the Ambassador. In the meantime, would the Ambassador kindly lend the twenty pounds?

You can imagine the surprise of the Englishman. He found out that the boy had come to him without telling his mother. After a great many questions, however, he determined to trust the little child. He handed the boy the money.

“Thank you, sir,” said the boy, and departed. The Ambassador dismissed the matter from his mind. But when quiet was restored in the city the little boy came to him again.

He told a terrible story. The street into which he had moved his mother turned out to be worse than the other. Blood had been shed all day long in front of their windows. The shells had exploded against their walls. They had been unable to get out to buy food. In the back room of their lodgings they had cowered and starved, expecting every moment to be killed.

“My mother's nerves have been greatly shattered by what she has gone through,” said the serious mite. “I think it is better to take her away from Paris, and I have decided to move her to Wiesbaden. I think that rest will bring her round. I shall take her away tomorrow evening.”

And then he pulled out a little pocket-book and produced the twenty pounds.

“I have brought you the money as soon as I could, sir, and my mother and I are much obliged to you. Good-bye, sir. Thank you very much.”

With that the little fellow held out his hand, and departed.

This is quite a wonderful story for all its shortness. This little boy, living with his invalid mother and two terrified servants, had summoned up the courage of a man, and in a time of bloodshed and panic had made himself the protector of the household.

OEDIPUS AND SAD ANTIGONE

ANTIGONE was the daughter of Oedipus, King of Thebes, but the princess was not as fortunate as the poorest bondswoman in the palace.

Her grandfather, King Laius, had been told by an oracle that his own son would kill him. Accordingly, as soon as Oedipus was born, Laius ordered a servant to kill the baby. This man carried the poor infant to a lonely place and there tied him to a branch by the heels. But a kindly shepherd found the child, and brought him up without knowing who he was.

When Oedipus grew to be a youth other boys used to taunt him with being a foundling. This made him so wretched that he journeyed to Delphi to ask the oracle there who were his parents. The oracle did not answer his question, but warned him: "Do not go home or you will slay your father."

Oedipus misunderstood the message. He thought that his home was a shepherd's hut, not a palace, and that the father he would slay would be his adopted one. So he wandered on into his true father's dominions. By and by, as he was climbing a narrow mountain path, he met two richly-dressed elderly men. One ordered him out of the way insolently. Oedipus refused to obey and the other drew his sword. The homeless youth was in the mood for a fight. His weapon leaped from the scabbard, and he fought savagely. Both men attacked him, but in the end his youth and hardihood gained the victory. Both the strangers were killed. He could not know that he had slain his father, Laius, and a courtier.

It was a long time before the bodies were discovered and the motive of the murder remained a complete mystery. Creon, the dead king's father-in-law, became regent. Shortly afterwards a terrible monster descended on Thebes, half beast and half human, and colossal in size. It was none other than the Sphinx. It lived on human beings. No weapon could pierce its hide. No bribe that was offered would induce it to leave the realm.

"I will go back to my own land," it cried to the royal messengers, "when a man can answer my riddle: What animal in the morning walks upon four feet, at noon upon two, and in the evening upon three? Whoever gives a wrong answer I shall devour."

Creon proclaimed that the man who solved the riddle should be given the crown of Thebes. Oedipus heard of the decree. As a beggar's life was not much to lose he decided to risk it.

He confronted the Sphinx in its lair and said: "A man in the morning of life walks on hands and feet; when he has reached manhood he walks on two legs; in the evening of life he supports his aged limbs with a stick."

This was the true answer. The angry Sphinx dashed its head against the rock and killed itself.

Oedipus was made king, without ever suspecting that one of the strangers he had slain long ago in the mountain duel was King Laius. He married, and had a daughter called Antigone and two sons called Polynices and Eteocles. For long years all was happiness, but presently a plague visited Thebes. The oracles were consulted, and said that the plague would go when the murderer of Laius was banished from Thebes.

Oedipus ordered men to search the past till they could discover him. Their investigations at last brought to light not only the whole story of Laius's death, but also the secret of Oedipus's birth. When he learned that he had killed his own father the despair of Oedipus was so great that he put out his eyes, crying, "I am not worthy to see the light!"

Then he consulted the oracle asking: "What is the name of the place where Oedipus will die?"

"It is a sacred grove near Colonus, in Attica," answered the oracle.

"Let me set out for that place now," said the king, "for I do not desire to live."

So he left his palace. With him went faithful Antigone, guiding the sightless man, and weeping as he wept. When they came to the grove Oedipus told her to let go of his hand. He walked forward alone. Suddenly the earth yawned under his feet, and he descended into the Underworld.

Poor Antigone returned broken-hearted to Thebes. Her brothers had decided to reign in turn, for a year at a time. As the months sped by Antigone's grief began to get less. Her chief comforter was her great-uncle Haemon, who loved her dearly. But soon fresh troubles came to her. The brothers fell out. Civil war followed. Both were killed in battle.

Creon was made regent until Eteocles's little son should be old enough to govern. The first thing he decreed was that Poly-nices, who had done most to cause the bloodshed, should lie unburied. If anyone put his body in a grave, that person should be buried alive.

Terrible as the threat was, Antigone could not bear to think of her brother left a prey to wolf and vulture. She stole out at night and buried him. But she was seen and denounced to Creon next day. In vain did Haemon beg for mercy. Creon could not be induced to break his word. The executioners stepped toward Antigone,

but before they could lay hands on her she had stabbed herself.

The tragedy of Oedipus has often made men ask : Why should he have been so heavily punished for a crime committed in ignorance ? But the story is founded on an unshakable law of Nature. Wrong-doing always brings suffering. A man who leads a drunken life ruins his health, and his innocent children may also inherit a tendency to grow up into drunkards. This is not punishment by Heaven, it is simply a law of Nature, like the law of gravity, which makes a dropped thing fall to the ground.

LAOMEDON, BREAKER OF PROMISES

WHEN Troy was a-building under the orders of King Laomedon there was anger in the home of the gods. Neptune and Apollo had disobeyed their king, Jupiter. As a punishment he exiled them to Earth for a year.

Laomedon was startled when the glorious sun god and the weed-clad sea god appeared before him. They told him who they were, and offered to help him to build Troy if he would give all the first-born of his cattle to their temples. Laomedon agreed to this.

For a year the gods worked faithfully, and then they returned to the Heavenly Hills. But Laomedon could not bring himself to part with so much as a lamb or kid in fulfilment of his promise. After a while sickness broke out among his people, and then a great tidal wave came out of the angry sea, destroying the crops. Laomedon was thoroughly frightened, and asked an oracle how to appease the gods.

"Instead of first-born cattle," came the reply, "you shall offer a Trojan maiden to the gods each year. She shall be chained to the rocks at low tide, and at high tide a sea-monster shall come for the sacrifice."

The maidens of Troy were assembled, and cast lots for the honour of dying for their country. Six times a noble maiden perished. Then it happened that the lot fell to Hesione, daughter of Laomedon.

The king loved this girl even more than his warlike son Podarces, or his handsome son Tithonus. She was the dearest thing in his kingdom, and he would have died to save her from the doom. While he was wailing upon his couch a messenger came to say that a stranger was in the

town declaring he could deliver the Trojans from the monster if it were made worth his while.

Laomedon sent for him at once. The stranger was no other than the famous hero Hercules, mightiest of men.

"Ask what you will !" cried the king.

"There are many fine horses pastured near the shore," replied Hercules. "I would rather have them than gold."

"They are mine," said Laomedon. "and they shall be yours if you can kill the sea-monster."

That night Hesione slept in the palace while Hercules took her place on the rock. At dawn he returned, his massive club stained with the monster's life-blood. Great were the rejoicings in every Trojan home. But Laomedon, now that he had nothing to fear, refused to give Hercules the reward he had promised.

The hero was so indignant that he persuaded Telamon, king of Salamis, to besiege Troy with him. Laomedon perished in the war. His children were taken captive, but Hesione was so well treated that she became reconciled to the victors, and consented to marry the ally of the man who had saved her from so terrible a fate.

When she was Queen of Salamis she redeemed her brother Podarces from prison and he took the new name of Priam, which means ransomed. Hercules, who only wanted his horses, not the crown, helped to establish Priam on his father's throne. Priam and Hesione would have given many herds of horses to restore Laomedon to life, but he had sentenced himself to death by his meanness.

THE MEN WHO CHOSE THEIR LIVES

This is the story of Er, told again from the famous Republic of Plato, written 23 centuries ago.

TEN days after the battle in which he had been killed Er was carried home.

The colour still lived in his cheeks, as though he only slept, but he was covered with wounds and cold as ice. A funeral pyre was built two days after the sorrowful return. As the mourners gathered round to take a last look at their dear one before the pyre was lighted, his eyelids fluttered and his lips parted in a sigh.

How their hearts leaped! Never was such happiness. Er was carried in to his bed, and nursed back to strength. Then he told an extraordinary story.

After receiving his death stroke, he found himself journeying over a plain with many others. At length he came to a place where judges sat examining all who came. Some were sentenced to take the right-hand road up to Heaven, and the others told to take the left-hand road down to a place of punishment.

Filled with awe, Er awaited his turn. When it came he was told that he had not been summoned for judgment, in order that he might carry back to men an account of the after life. He drew aside, and watched.

Besides the newly-sentenced going up and down he saw those who had finished their punishment coming up, tired and travel-stained, from the under-world, while those who came back from their heavenly reward were shining and tranquil. Greetings passed between many of them, who had known each other on Earth, as they gathered in a large meadow near the place where the judges sat. Many questions were asked. A thousand years had passed since these people died. The sinners had suffered ten times over all the injuries they had done others, while the good had been ten times rewarded for the acts of mercy and charity they had done.

One former sinner told a friend from Heaven that when his time for leaving the under-world was at an end he and his companion were led to the mouth of a hole leading to the upper air. When one of them, King Ardiaeus the Great, approached, the hole bellowed terribly, and the fierce porters of the place declared it was a sign that he had not repented, and dragged him away. "Nothing," he said, "can describe our terror."

For seven days all the spirits rested together in the meadow. Then they set out on a three days' journey till they came to a place of great light, where Necessity sat spinning her magic distaff, which uttered a heavenly tune as it turned. Near her on thrones sat her three daughters, the Fates, clad in white, chanting of the past, the present, and the future.

An interpreter who had conducted the souls thither led them before Lachesis, the Fate who presided over destiny. In her lap lay a number of lots, which the Interpreter sprinkled among the crowd, saying:

"Thus saith the maiden Lachesis, the daughter of Necessity. Ye short-lived souls, a new generation of men shall here begin the cycle of its mortal existence. Your destiny shall not be allotted to you, but you shall choose it for yourself. Let him who draws the first lot be the first to choose a life which shall be his irrevocably. He who desires virtue and happiness shall have more of them. The chooser, not Heaven, decides."

When every soul had picked up a lot the Interpreter took from Lachesis a great number of tablets, on each of which was inscribed a plan of life. He spread them out on the ground. Some were human and some were animal, for the spirits of men and beasts were present. Some were high, some were low, some were packed with glory or shadowed with sorrows, but none were wholly joyless, and there were many more to choose from than choosers.

One by one, in the order of their lots, the spirits chose. The first went eagerly forward, and chose the lot of an absolute despot, but so hastily that he did not examine it carefully first, and afterwards saw that the despot was destined to kill his own children.

Er saw that the spirits from heaven often chose foolishly, while the former sinners, schooled by suffering, showed much care and wisdom. He guessed that the foolish spirits from heaven had lived easy, untempted lives on Earth, unlike others who had won their way to Paradise by struggling against great difficulties.

Er saw strange things. Orpheus, who was stoned to death by women, chose to be a swan rather than have a woman for his mother. Brave Ajax chose to be a lion. Agamemnon, rather than taste again the treachery of mankind, chose to be an eagle.

Atalanta, the huntress princess, chose to be an athlete. Odysseus the Wanderer had the last lot. He examined all the plans till he found one of a quiet life, which he picked up gladly, saying, "Had I drawn the first lot this is the life I would have chosen."

Then the souls were led away over a vast dreary plain, till at nightfall they came to the River of Indifference. All drank but Er, and fell asleep. Each soul who drank forgot completely all his former life.

JOHN MAYNARD, PILOT

IN thick darkness the great steamer was creeping through dangerous but smooth waters towards the end of her journey.

The passengers and most of her crew were asleep in their berths. The captain was taking his well-earned rest in his cabin. On the bridge was the pilot, a man named John Maynard, who had left his wife and son to bring this great ship safely into harbour.

It was one of those dark nights at sea when it is impossible to catch a glimpse of the vast ocean through which ships make their way. Not a star shone in the sky. The little discs of light made by the port-holes perished in the wall of darkness enclosing the ship. The only sounds in the darkness were the grinding of the paddles and the deep murmur of the sea.

So smooth, so gentle, was the ocean, that none could dream of disaster. It was a fitting night for the peace and rejoicing of a home-coming.

But suddenly a terrible cry arose above the sea: "Fire!"

Gone now was the darkness. Every face was visible. Every line of terror could be seen in that frightful glare. And another sound was added to the moan of the sea and the noise of the paddles—the rushing, roaring, hissing sound of fire, that leaped in a cloud of sparks to the sky.

The captain cried out in a loud voice: "In ten minutes more we shall have reached land. Our lives may yet be saved. It rests with the pilot. If he can hold on at his post we shall reach the land." He turned round, and called: "John Maynard, are you there?"

A quick answer came from the bridge: "Ay, ay, sir!"

In an instant despair was turned into hope. That answer was so strong, so sure.

At midnight came a clap of thunder and an earthquake. The souls were carried off this way and that like shooting stars.

Suddenly Er found himself lying on his funeral pyre.

He told his friends that the gods had sent him this vision in order to teach men the great truth that wisdom is necessary not only for goodness, but for welfare. Man must serve Right not only with his heart, but also with his mind. His fate is his own choice entirely.

The great ship, now a driving shape of flame, cut through the smooth and dangerous water at its highest speed, a race against fire!

Would they reach the land in time? With every turn of the paddles they were nearer to safety; but with every second the flames increased in fierceness.

What of the pilot? Was he still safe at the wheel?

"Are you there, my lad?" cried the captain, anxiety in his voice.

There was no answer.

The passengers felt their hearts sink, and a new terror possessed them. But, just as they began to abandon hope, the answer came.

"Sir, I'll try," said John Maynard.

The thoughts of the passengers at that instant were turned from the faithful pilot. The lights on land suddenly stood out before them in the distance. A loud cheer ascended from the decks. They were saved. Land was near. Boats could be seen putting out to them.

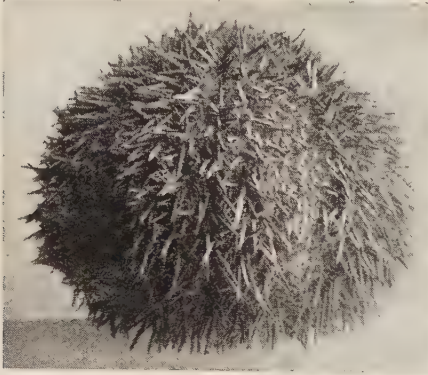
John Maynard, from the bridge, could see mothers clutching their children to their hearts. His own little son, his well-beloved, was asleep at home, far away. The moving mass of roaring flame, which once had been a ship, reached the harbour.

Passengers threw themselves into the waiting boats. Not a thought was given to the pilot. On the sides of the harbour was gathered a dense multitude.

When everyone was saved the boiler exploded with a deafening roar, and John Maynard was hurled into eternity.

Many men who stood on that flaming deck remembered to their dying day, as the most vivid impression of their lives, the look on John Maynard's face as he held to his post in the blinding smoke and the fiercely raging fire.

Nature's Wonderful Living Family in Earth and Air and Sea



Common Sea-Urchin



A Beautiful Sea-Anemone

QUEER AND LOWLY CREATURES

ONE of the oddest things that ever was alive is surely the sponge, the Companion of the Bath. Let us examine him with respect and intelligent questioning.

Once, like the child to whose comfort and cleanliness it ministers, it had life, movement, appetite, and, in its early youth, extreme activity:

This curious honeycombed substance, so light and elastic when dry, so soft and collapsible when wet, is simply the skeleton of an animal, and if we catch that animal young enough we may see it scurrying about in the sea with preposterous seriousness, as if it would "sail beyond the sunset and the baths of all the western stars" until it dies.

The lower half of this fussy little navigator is bearded with hair-like processes waving like tiny oars or arms, and so propelling it through the water. There must be something almost like thought in the nervous product of this small organism, for when it desires to progress in a straight line, it does so, approximately, but when it no longer directs its course it stops and its still-waving cilia make it spin like a whirligig beetle in the garden pond.

This consuming activity is of short duration. Like the baby oyster, the youthful sponge thinks better, or worse, of its policy of adventure; it sinks to the

bottom of the sea, attaches itself to rock or weed, or to some shelled animal, and its roamings are at an end.

The oval body with which it set out in life undergoes marked changes. The ciliated part is drawn inwards, and the globe-shaped little creature becomes cup-shaped. Within there is busy reconstruction of parts. The cell masses are converted into canals in which a jelly-like mass of flesh is resident, equipped with more of the vibrating processes to draw water and food into those canals.

The small openings in our bath-sponge are the canals by which water is conveyed to bear life-sustaining oxygen to the sponge and also to feed it. Each draught of water taken in contains organic and vegetable matter which, caught and strained away by a delicate membrane at the junction of the little canals, is digested in the sponge's alimentary system, while the exhausted water, together with waste products of the body, is then forced out of the large openings which we observe, and so all is well.

The sponge grows as it feeds; it gives rise in due course to eggs which, at the right time, are washed out of the parent body in the flood of water ejected from the main channels, to hatch into free roving little animals which become sedentary.

Catch a sponge alive, confine it in a sea-pond, and let it have a sufficiency of water for breathing and nutriment, and it will continue its growth. When sponge fishers have little sponges or excess of large sponges in hand, they do keep them in this way, and feed them in the manner indicated, so making it possible for us to have our little joke as to giving the sponge his breakfast.

THE LIMY SPICULES WITH WHICH THE SPONGE DEFENDS ITSELF

Before the sponge can be sent to market its skeleton must be freed from the slimy contents which constitute its vital parts, and from the sand, mud, worms, and other parasites which take up residence within it. A more serious difficulty is the mass of limy spicules which it contains. These are as much part of its fabric as the substance with which we wash. They are a stiffening and a defence. They occur in great numbers in the walls of the canals.

Often we receive a severe scratch or scrape from a new sponge, the reason being that the substance has not been entirely freed from these spicules, and we all know how difficult it is to remove them from the sponge without making ugly rents in it. The paint work of many a good car has been scratched and spoilt because chauffeurs are too indolent or ignorant to look beneath the surface of a coarse sponge for the shell-like mass of limy spines left by the man who prepared the sponge for sale.

The finest sponges for the toilet come from the eastern Mediterranean. These are sponge-fishing grounds of immemorial antiquity, and supplied Aristotle with the specimens which he declared to be animals, 2000 years ago, though men less wise contradicted him down to the middle of the nineteenth century.

THE DIVERS WHO GO DOWN INTO THE SEA TO LOOK FOR SPONGES

Larger sponges come from the waters of Florida and the West Indies, good but not equal in quality to those of the Old World. Contributory sources are the Bahamas and various areas of the Pacific. Methods of collecting the sponges differ, from the enterprise of the fully-clad diver, and the naked native with his foot in a rope tied to a stone sinker, to the longshoreman who, wading into the water, rips off his sponges from the rocks by means of a pronged spear, and so spoils half of them.

So far we have mentioned only the

sponges of economic importance, and but one method of reproduction. In most cases multiplication is effected by the budding off of miniature sponges from the parent. We can watch this process for ourselves in the case of one of the fresh-water sponges, the *Spongilla*. Life passes from the parent sponge with the fading of summer, but from its substance new life takes rise, to drift away with the spring and form new sponges.

As Nature takes more than one means to increase her store of sponges, so she has claimed many situations for this branch of her children, inshore waters, deep-sea abysses, and all the ranges of soundings between. Siliceous spicules enter into the composition of them all, but in the so-called glass sponges the silica is of the thinnest, most brittle texture. Yet this extraordinary substance serves as an anchorage in the Japanese *Hyalonema*, which is attached to the mud by a bundle of strands of "glass rope," which might have been produced by a human glass-blower of unrefined art. In the *Semperella*, the attachment is not a glass rope but an amazing glass-like spicule, as thick as a man's little finger and nine feet long.

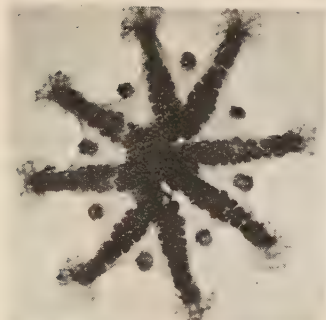
HOW THE SPONGES HELP TO MAKE THE WHITE WALLS OF OLD ENGLAND

There are multitudes of sponges with six-rayed spicules in the chalk of our land, and a lovely kind, the *Ventriculites*, shows us how old is exquisite ornamentation in the scheme of things. Our very flints, dug from fields and from the chalk which once had life, have sponges in their composition. A sponge is often the nucleus of these stones, and the siliceous material of which they are fashioned is derived very largely from the spicules of sponges that fed and flourished in ages that are gone.

But if sponges help to form the white walls of Old England, they help to destroy those walls, too. There are forms of these animals which, by some mysterious power, can not only wear their way through the shells of oysters, but tunnel our chalky cliffs.

Most of us who visit Dover have seen chalk there actually toppling or lying where it has fallen from that height to which the blind King Lear was led. If we could see in advance the place from which such falls occur, we should probably find that sponges have been the enemy

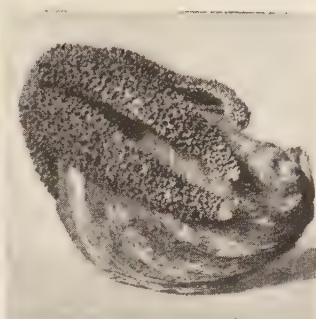
NATURE'S LOWLY CHILDREN



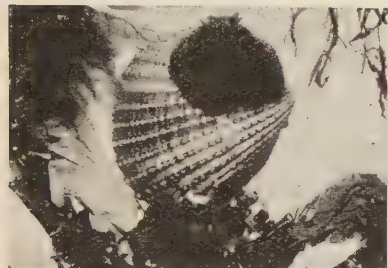
AN UMBRELLA-LIKE JELLY-FISH WITH ITS EGGS



A SEA-ANEMONE IN A ROCK POOL



A STARFISH OPENING AN OYSTER SHELL



A BEADLET SEA-ANEMONE ON A COCKLE SHELL



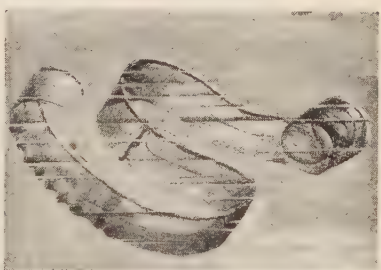
A SEA-PEN



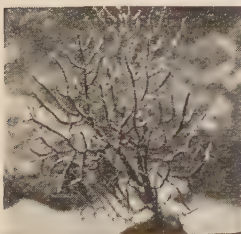
A LONG-SPINED SEA-URCHIN



A SEA-CUCUMBER



VENUS'S GIRDLE



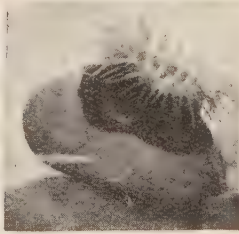
A SEA-FAN



A DISC JELLY-FISH



BIRD'S-FOOT STARFISH



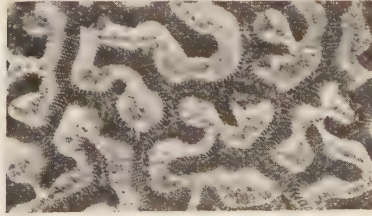
BEADLET SEA-ANEMONE WITH TENTACLES EXPANDED



RED CORAL



A STARFISH



BRAIN CORAL

The pictures on these pages are by Messrs. Berridge, Martin Duncan, Johnson, Ward, and others

within the gates. They bore deep in the yielding chalk, open the way for disrupting water, and make destruction sure, if slow.

Of course, we must not lay the blame for this sort of work to the account of the sponges which we see by the sea between high tide and low; each genus has its station, its own sea-keep, its home in fresh water, its way upon the rock. There is the bread-crumble sponge, a colony of many sponges, living on our shores; there are the Mermaid's Gloves cast up, living, every rough tide; and sponges of all sorts through all seas, till we come to the tremendous Neptune's Cup, a marvellous piece of architecture, three or four feet high, built up by many sponges which act as one, which raise the great stalk, then the vase-shaped cup, and make it lovely as the work of an old Etruscan potter.

A story passing the invention of man's imagination runs through all this. Deep in the fiery crucible of the Earth, mineral boils like water in a kettle, and by volcanic action bursts out to the surface to form granite or other igneous rock, the hardest rocks we have.

THE FASCINATING STUDY OF THE CHEMISTRY OF NATURE

That rock is worn away by the slow file of Time and is washed down into the rivers and so to the sea, to form silica when extracted by diatoms and other microscopic organisms. Such particles are received into the digestive cells of the sponge and form their spicules, their boring tools, their defences, their dwellings, as in the Neptune's Cup, and eventually turn to flint.

Is not the chemistry of Nature inimitable; the study of her works more fascinating than the stories written to fire the minds of adventure-loving boys? If sponges can do such things from this substance that came from a volcano, what can corals do? We shall see presently, but will call by the way on the very converse of the horny sponges, the coral's relatives, those flimsy, transparent discs of life that float in every sea, the jelly-fishes.

These, with the corals and anemones, are called the Coelenterata, and share the common peculiarity of an all-round structure, so to say. That is, they have no "sides," but are circular and symmetrical. Moreover they have no internal divisions of the body, like the higher animals, but are furnished with a digestive system which

is not a closed canal, as we should expect to find, but is practically the entire interior of the body. At first sight they appear the most defenceless of creatures, but they have their stings and poisoned barbs most potent.

THE DISCS WITH WHICH THE COMB-JELLIES CATCH THEIR PREY

All our rules have their exceptions, and we must hasten to note some here. For the *Ctenophora*, or comb-jellies, have no stinging cells, but multitudes of tiny adhesive discs, which clutch and secure minute prey. Then, another of the exceptions, the lovely Venus's Girdle, is not circular, like the rest, but exists as a broad ribbon of exquisite life, fringed with cilia which bring food within range. Some of this group have taken to creeping along the sea-bed, and so have assumed a drawn-out two-sided form. All animals are thought to have passed through the Coelenterata stage, and we may guess from the comb-jellies whence the octopus derived his sucker-discs, and, from the crawling species, how two-sided shapes were standardised.

Passing to the *Cnidaria* we have an example of a dazzling contrivance on the part of Nature for distributing her family, in what is called Alternation of Generations. It is not peculiar to this group, but here we may examine the method. Suppose we have a jelly-fish mass which, as with the sponges, comprises many individuals all united into one. If these went on budding and growing, the mass would become inconveniently large. If the component parts all produced eggs, they would overcrowd the sea in their neighbourhood and bring about starvation for themselves and all their kind thereabouts.

HOW THE JELLY-FISH FAMILIES ARE DISTRIBUTED OVER BIG AREAS

Now see what happens. The many-in-one are called a stock. Parts of the stock, charged with eggs, break away, like the gemmules of the sponge, float off and colonise some new area of water, where the eggs are produced. Some of these sink and form new stocks, which will bud off new attached members. Others of the eggs, however, will hatch straightway into free-swimming jelly-fish. The plan is ancient and has been employed in many forms of life by Nature. In the jelly-fishes it has succeeded wonderfully.

The type is represented in all waters,

from the shores of Britain, through the Tropics, and away towards the waters of both the Poles. One would expect the warm-water regions to produce the giants, and mighty forms are there, but probably the chill waters of the far north and south have the Titans, for one of our recent Antarctic expeditions hauled up from the water, at the foot of the Great Ice Barrier, a jelly-fish which was 29 inches across the upper part, and weighed over ninety pounds.

THE FLOATING UMBRELLAS WITH A MASS OF WAVING ARMS

How much such a monster would weigh after its watery contents had escaped one cannot venture to guess, but we have all heard of farmers carting jelly-fish in loads, a ton and more at a time, as manure for their land, only to find, as children find by the shore, that their sea booty resolved itself into watery films.

Jelly-fish life extends into many species and is complicated and fascinating. In general we know that the body, a mass of glassy jelly enclosed between the upper and lower sides of the bell or umbrella, bears a number of arms or tentacles, and that from these issue the abominable stinging barbs. These can be drawn in and protruded like the action of a glove-finger which is alternately tucked in or pulled out, but when the apparatus is shot forth and touches, its little weapons sting with the rapidity of a nettle, but with infinitely greater virulence.

In the jelly-fish, of which the *Siphonophora* are the highest form, we have the same system of stocks and single individuals as in the former species, but still more remarkably developed. Here, in a single floating mass, we have congregated together a series of individuals united, yet recognisable as many in one.

THE DIVISION OF LABOUR IN THE JELLY-FISH COLONY

Such a jelly-fish colony is more socialistic than a community of ants or bees; its labours are subdivided yet co-ordinated as in a modern mass-production factory. There are jelly-fish in the united mass which propel the whole colony along, their function being to take in water, contract and squirt it out, and in that way row the living city about. Then there are others which guard the colony from offence, like the huge-jawed soldiers of the warrior ant colonies. In addition there are the mem-

bers which produce eggs or buds, and finally those which collect the food, digest it and pass the nutritive result from end to end of the entire body of many individuals in one.

Of the *Siphonophora*, the Portuguese man-of-war is the culminating height of jelly-fish perfection, a thing of exquisitely radiant colours, whose body is like a luminous inflated sack, six inches in diameter, with a living nursery attached to its underside, and stinging tentacles, several feet long, streaming like a corrosive battery far in the water.

There are free-swimming jelly-fish, in the *Hydromedusae*, which are solitary and must fight and fend for themselves. Extraordinary facts regarding food supply have been discovered concerning these. Not only do they exhibit instinctive genius in catching food with their tentacles; they are known to collect food which falls on the upper side of the bell, securing this supply partly by the rhythmic movements of the bell, and partly by the action of minute cilia.

The united result is that the prey or organic matter is gathered into little heaps, mixed with mucus, brought to the finely fringed edge of the upper side of the bell, then, by means not yet ascertained, conveyed to the underside and so to the tentacles and thence to the slit-like mouth.

THE TINY ORPHANS WHICH GO TO THE JELLY-FISH FOR PROTECTION

Included in the diet of these jelly-fish it is surprising to find the tiny larvae of oysters, whelks, and the like, eggs of fish, little crustaceans, tiny bristleworms, and multitudes of algae. So the jelly-fish is a free feeder, and takes things that might become food for man. On the other hand, he swallows the enemies of our fishes and molluscs, and is a benevolent nursemaid to many kinds of fishes.

Baby herrings, baby codfish, and a multitude of other friendless orphans which eventually come to table in breadcrumbs or batter, look to the jelly-fish for shelter. But why does it not sting them to death as it stings other fish which do not go to it for aid?

Certain crustacea, whose hard coats make them indifferent to its stings, play the brigand to the jelly-fish; they attach themselves to it and actually take the food out of its mouth. That is disastrous to the jelly-fish's prospects of long life. Now the

little fishes which it shelters are the very ones which need crustacea as the main part of their diet. So, when the robber is pillaging the mouth of the jelly-fish, the welcome fish swim up and devour the intruder.

For that service they are entertained without harm by the master of barbs and stings. But let an enemy of those fish pursue them within range of the jelly-fish, then out go the stings, and the foe is either stunned and caught, or so severely punished that it is glad to escape with bare life.

THE QUAINT ANIMAL WHICH IS LIKE A FLOWER IN APPEARANCE

A similar scheme of mutual aid extends to the relations between the sea-anemones on the one hand and several other types of life, crabs, whelks, fishes, even actual vegetation, on the other hand. For, in spite of the name, the sea-anemone is not a vegetable, like the plant with which it co-operates. It is a true animal, low down in the scale like the sponge, and with decidedly vegetable suggestions in certain of its features. But the most flower-like of all its attributes is its actual appearance.

Anemone it certainly is not, even in outline. We might liken it to some exquisite daisy, chrysanthemum, or dahlia, perhaps, but not accurately to the delicate windflower. No matter, a sea-anemone flourishes as lustily by this name as any other, and it is a thing of rare beauty and wonder to all who have eyes to see and access to its home.

The body, with its leathery covering and strong muscular substance, is always heavily fringed with tentacles about the mouth, and these tentacles are armed with minute thread cells which bear poison, so that the arms not only cling but sting. The strength of a single tentacle may be insignificant, but the drawing power of the entire assembly is astonishing. They cannot pull our finger into the interior of the animal, but the force is noticeable even in the small species which are found round our coasts.

THE ANEMONE WHICH MADE A MEAL OF A PENNY

The anemones are sightless, but the possession in some species of brightly coloured, bead-like prominences at the base of the tentacles around the mouth suggests that they are sensitive to light. These organs might, in course of time, possibly develop into a sort of eyes, though

the suggestion is risky considering how ancient a type the anemones form.

Touch and the power to absorb seem the chief assets of the anemone. One has been known to swallow a penny. Another was fed with eleven small crabs in succession. This one was exposed in a rocky pool whence the tide had retreated, and it clung, neatly folded in, looking like a large red jujube.

But it needed only a touch to cause it to thrust out its tentacles and to take in the proffered crab. Again and again it accepted the offering, till it bulged with live-stock. Why did not the desperate little crabs eat their way out? The anemone, once it swallows them, is able to paralyse their action and slowly to absorb their fleshy contents.

All the tribe are heavy feeders when the opportunity offers. One swallowed a bivalve as big as a saucer. The meal so distended the anemone that it stretched and divided into two halves, with the result that a second mouth and set of tentacles formed—one set above the prey, the other set below—two anemones in one.

THE NEW ANEMONES WHICH GROW LIKE BUDS ON A STALK

All the anemones are sedentary, attached by a stout foot muscle to rock or sea vegetation, unless they anchor themselves to a moving animal, or, as happens with several species, burrow into the sand.

Sometimes new anemones bud off from that footstalk, but as a rule eggs are laid within the parent body and hatch there, and the larvae swim out when ready, or are ejected in a jet of water which passes out of the adult's mouth.

Great interest attaches to the feeding and general life habits of the anemones, but if one would preserve his poetic conception of their beauty and charm he had better not attend their dinner-table. No syren, no monster of the sea, could ever have been so frightful to ancient human imagination as an anemone must be to the fishes and crustacea which it draws helpless into its insatiable maw.

Nevertheless, there is nothing lovelier in the seas than the anemone, no richer hues in the rainbow. There is no garden in the world more rich and varied in colour and design than sea deeps where tropical and sub-tropical varieties spread their gorgeous filaments and ravenously prey.

It is but a step from an anemone to a

coral polyp, though no anemone ever furnishes itself with a hard skeleton. The coral polyps, on the other hand, are the foremost builders in the realm of Nature. Dead, minute shelled animals have formed mountain ranges, but living, the polyps have changed the bed of many a seaway.

They take mineral matter from the sea, and they take it also from the myriads of microscopic animals with limy coverings which form part of their food; and the whole they convert into coral as hard as rock, which, when brought into human service, takes a polish as fine as marble. Having studied the bee with its waxen cells, the spider and caterpillar with their webs, the molluscs with their shells, and the birds with their lime-coated eggs, we are now prepared to contemplate even these massy marvels of coral with reasoned philosophic belief.

The little animals, flower-like in appearance, grow together in countless profusion in their colonies. Instead of working together to produce wax, like bees or wasps, they build up masses of this lovely limy coral. They are not aware of what they are doing, for they are lowly organisms, in spite of the marvels they achieve.

THE ISLANDS MADE BY TINY CREATURES IN THE SEA

They work together night and day, secreting the material and building it into reefs, into islands, into barriers, into crater-like atolls. They have given us hundreds of islands on which men dwell and make their homes of the material that these minute animals have created. They alter the depths of seas by changing the levels of sea-beds. They nearly cost us the lives of Captain Cook and all his crew, when a piece of coral from the Great Barrier Reef off the east coast of Australia penetrated the hull of his ship, and then, by remaining fast in the hole thus caused, saved him from the wreck which must have resulted had the mass become dislodged before he gained harbour and the chance to careen and repair his ship.

Age after age these great structures rise beneath warm seas. Coral polyps are born and die. They are eaten by fishes which, like sheep on the downs, browse where the polyps thrust out their bodies with waving tentacles to gather food from the water. But their work goes on, century after century, epoch after epoch. Coral polyps are growing at the bottom of

the Red Sea today whose ancestors were at work there when Moses led the Israelites from Egypt.

Many illustrious names are associated with the problem of coral structure. Everybody believed the substance to be sea vegetation, that the polyps were the blooms, and that the mineral, covered with a sort of skin, was the trunk of the plant or shrub.

But how were they to account for the rocklike consistency of a living shrub? "Ah," said the wise ones, "the coral is soft and flexible, like plants of the Earth, till it reaches the air, then it instantly hardens into this rock-like substance."

THE GREAT BARRIER REEF WHICH IS 1250 MILES LONG

Eventually a French scientist conducted experiments with professional coral fishers. He made them dive and feel at the coral. They came up reporting that the under-sea coral was as hard as that out of the sea. He could not, dared not, believe it, so, slipping off his clothes, he, too, dived, groped among the coral, and found the report to be true.

The amount of coral created by these puny animals is beyond human calculation. The animals are in every area, and even in fresh water, though it is in warm seas that they attain their greatest luxuriance. On some coasts they appear merely as scattered groups or mounds of coral rock, but west of the Fiji Islands is an area of coral reef 3000 square miles in extent, and the Great Barrier Reef of Australia attains a length of 1250 miles, all the work of these minute animals.

Engineering so terrific as this naturally spells jeopardy to navigation, and the menace grows from age to age as the unflagging builders toil. But they have fashioned many a sweet sanctuary for ships by their atolls, many a home for man in the midst of blue and sunny seas. On and on, up and up they build.

THE TIDE-BORNE LIFE WHICH COMES TO THE NEW ISLANDS

Fish tear and rive at the coral, worms tunnel, waves break and crumble the rock, wrench off boulders of it and use these as battering rams to demolish still more. At last there is a fine deposit to which one day a voyaging coconut comes and takes root, rises into a tree from which new nuts fall and create a grove. Birds, weary of sea flight, arrive and make

their nests; tide-born seeds and drift-carried animals, reach the island.

Finally, one day a man in a boat casts anchor in the bay. Crusoe has come to his kingdom, but not through shipwreck.

None of us forgets that not all corals build reefs or barriers and islands. Some lovely isolated forms exist, marvellous in beauty of design, dainty as flowers in colour. There are the extraordinary star coral, the brain coral, the branching *Dendrophyllia*, the massive *Astroides*, the exquisite sea-pen, the sea-fan, and hundreds more, an inexhaustible study.

THE HUNDREDS OF SUCKERS IN EACH FINGER OF THE STARFISH

Another important group of sea animals turn the mineral properties of sea water to account in a different way. They have put on a lime-charged mail, which is either prickly or of a gritty, leathery texture. The prickly ones give the name to the sub-kingdom. That name is *Echinoderm*, which is derived from two words meaning hedgehog-skin. The whole class is jointless and limbless, though the starfish would seem to be five-limbed.

These are not legs in the ordinary way, but fingers. Yet it is by their aid that the creature moves and gains its livelihood; not by walking, however, but by suction. In each of those fingers are some hundreds of suckers, which, withdrawn when the starfish is at rest, can be protruded to grip the ground and pull the whole body forward. The starfish does not walk, then; it glides, following every inequality of the surface by fitting itself over it, and slithering forward.

THE MIGHTY PULL WITH WHICH THE STARFISH OPENS THE OYSTER

Some children have a horror of starfish, thinking that the creatures sting. We have no reason to fear them; they do not hurt us, except commercially. Molluscs should fear them—the mussels, oysters, and cockles. The starfish can do what a man cannot; it can open an oyster with its fingers. Raising itself on the tips of its fingers, it grips the shells of the oyster firmly and pulls. The oyster is very strong, as we all know, but that steady pull wears it. The shells are forced apart, and the starfish eats the oyster.

Enormous damage is done to our shellfishes in some years by starfishes. In 1918 they attacked the East Coast shellfish beds in such swarms that one small trawl

alone dredged up 37 tons of the five-rayed foes, but not till the latter had devoured every mussel and cockle in the channels of the low-lying areas on which they had advanced. And that followed the destruction, two years earlier, of 75 tons of starfish in the same area. Fishermen hate these little creatures, and were wont to tear them to pieces. This was fatally mischievous, as well as cruel, for sundered pieces of starfish grow into new starfishes!

There is no such charge of damage to urge against the starfish's cousins, the sea-urchins and the sea-cucumbers. It is generally possible to find a sea-urchin without going to the sea. One has only to gain access to a chalky formation and dig, and fossil urchins are practically certain to be there. These are the creatures which, in addition to a limy shell, possess the prickles, like a hedgehog, which give the name to the whole group.

THE STRANGE CREATURE WHICH SHEDS ITS INSIDE WHEN FRIGHTENED

The sea-cucumbers lack the prickles, but lime enters largely into the composition of their covering. The proportion of this mineral in the sea-cucumber determines its value in countries where these animals are eaten. The sea-cucumber has the faculty of dismembering itself. A lizard can snap off its tail, a brittlestar can shiver its fingers to pieces, a lobster or a crab can shed its shell and the lining of its digestive system while preserving its soft body-form; but the sea-cucumber, if it is frightened, or angry, or unwell, can discard its entire interior, stomach, intestines, tentacles; everything, one would think, which makes life either tolerable or possible.

Away go all its physical possessions save the mere empty skin. There lies this apparently lifeless husk, for weeks, perhaps months; a husk in which the life principle alone remains, the tendency to grow and regenerate. The creature cannot eat or drink or in any perceptible way take nourishment. Yet, as the lobster regrows its claws, the lizard its tail, the starfish its fingers, so this lowly marvel develops a new body, which the external covering alone remains to house.

Animal life, one would think, could hardly go deeper into primitive characters than these we have been considering, but the profoundest depths of life have not yet been reached.

The Story of the Things We See About us Every Day



In the sound-recording room of a film studio

HOW THE CINEMA CAME

WHEN the men of the Stone Age painted pictures of running horses on the walls of their caves they drew the legs of the animals in very queer positions. The attitudes of the horses, indeed, seemed so unnatural that when modern explorers found the pictures they laughed at them.

But the men of the Stone Age were accurate after all. Horses do run like that, and it was the Cinema that proved the ancient artists to be right, for the instantaneous photographs taken for a film show the galloping horse's legs in exactly the same positions as they were drawn by the Cave Men. Those early artists might indeed call the moving-picture maker of the twentieth century as a witness to their accuracy of observation.

The cinema is undoubtedly one of the most wonderful of the many wonderful inventions of modern times. It makes a picture live, and by its aid we can reconstruct the past, we can bring the whole world of the present with its varied and magic life into a room, and we can see not only the actions and hear the voices of men, but we can witness the processes of Nature herself in operation.

Unlike the telephone, the gramophone, and many other wonders of the day, the

cinema cannot be said to have been invented by any one man. Rather is it the product of the discoveries and inventions of many men, all working toward the same end. The moving picture is, in fact, not so much an invention as an evolution. The inventors of the ordinary photograph were, of course, the pioneers, though even without them we could have had moving pictures of a kind. But such would have been drawings, and might or might not have been true to life according to the skill or otherwise of the artist. It was photography that opened up the vast possibilities which have come, and are still coming, to fruition in the splendid moving picture of today.

It is a matter of great satisfaction that Englishmen should have played the leading part in the development of the cinema. So far back as 1833 an apparatus called the Zoetrope, or wheel of life, was invented or described by an English mathematician, W. G. Horner, and gave to pictures an appearance of vivid movement. It consisted of a hollow cylinder with a number of slots cut round its upper part, and round its lower part inside was arranged a series of drawn pictures showing successive stages in the movements of a galloping

horse, a walking man, or other moving objects. When the cylinder was rotated, and one peeped through the slots which came in rapid succession as though they were one slot, the horse seemed to be galloping, or the man walking. This was due to each picture of the series impressing the eye for only a moment, and the whole set becoming merged into what seemed to be one picture combining the successive positions of the legs and body, with the illusion of motion.

HOW THE FIRST MOVING PICTURE OF A HORSE WAS TAKEN

The zoetrope was soon improved upon, and was succeeded by a number of later and better appliances with long and difficult names, like praxinoscope; but we must remember that the old zoetrope was really the parent of the modern cinema, the same principle, the illusion of motion, being used in both instruments.

A great advance was made in 1872 when the idea of adapting photography to the zoetrope was first thought of. In that year Edward Muybridge, a native of Kingston-upon-Thames living in San Francisco, conceived a novel way of obtaining a series of snapshot photographs of a galloping horse. He arranged 24 cameras side by side along a track, and on the opposite side of the track he erected a high fence painted white, while across the track at intervals he stretched 24 threads, each of which was connected with a spring holding in position the shutter of a camera. A horse was then set galloping along the track, and, as it passed each thread, it snapped it, opening the shutter, and taking a photograph of itself.

THE MEN WHO GAVE US THE FILM AND THE MOVING PICTURE CAMERA

The result was a series of 24 instantaneous photographs, more or less in silhouette, showing successive movements of a horse galloping.

But before the moving photograph could become a practical proposition the film had to be invented, for without it a thousand cameras would have been needed to take sufficient photographs to show a moving picture for one minute on a screen. Several attempts were made to devise a suitable film, but it was not until 1884 that the first real photographic film was invented by George Eastman of Kodak fame.

The next thing needed was a camera that would take a series of pictures on a

film, and the first moving-picture camera to use perforated celluloid film as we know it was patented by William Friese-Greene, a native of Bristol, in 1889. His claim to be the true inventor of the moving-picture camera was decided in the United States Circuit Court of New York. As early as 1885 he had produced a moving-picture camera in which glass plates were used, and in other cameras of his he used strips of sensitised paper and celluloid strips which had no perforations.

Another cinema man of this time to whom great credit is due is Louis Aimé Augustin Le Prince, a Frenchman who had settled in Leeds. While in America in 1886 he invented a multiple-lens camera for taking moving pictures, and after further experiments he produced a single-lens camera with which he photographed scenes on Leeds Bridge in 1888. On this occasion he used a strip of sensitised paper; though he, too, thought of the idea of having perforated edges for his films.

Friese-Greene and Le Prince were thus working along the same lines although entirely independent of each other.

Later, Edison invented the kinetoscope, into which we looked to see the moving picture, turning a handle to rotate the photographs; this he patented in 1893, showing it at the World's Fair at Chicago.

THE IMMENSE MULTITUDE OF PEOPLE WATCHING MOVING PICTURES

Both Friese-Greene and Le Prince succeeded in projecting their pictures on to screens, but the first really satisfactory projector was invented by Robert W. Paul, another Englishman, in 1895.

From that time to this the story of the cinema has been one of constant progress and improvement. The most important development was the introduction of talking films in 1929, which made the cinema a greater rival to the legitimate theatre than ever before. Films in full colours are an attractive but more recent development.

The chief appeal of the cinema is as an entertainment, but it also plays a very great part in education. The moving-picture industry, which has grown up during this century, is one of the greatest in the world. In the United Kingdom alone every year over 1600 million seats are occupied by people watching the films. It is a record without parallel.

PICTURE-STORY OF THE CINEMA



No longer is the film producer entirely dependent on the weather for his outdoor scenes. With wonderful cameras and with batteries of powerful lamps to provide extra lighting, outdoor photography of excellent quality is sometimes possible even on dull days, and night scenes are often taken out of doors. Here we see cameramen photographing an out-door scene for a film from a travelling camera-crane, with a battery of lamps in the background.

SYNCHRONISING SOUND TRACK AND PICTURE



The scenes in a film are photographed in any convenient sequence, and so at the beginning of each scene a board giving the scene number and other details is held in front of the camera. On top it has a "clapper" which is shut with a sharp rap to assist subsequent synchronisation of sound track and picture.

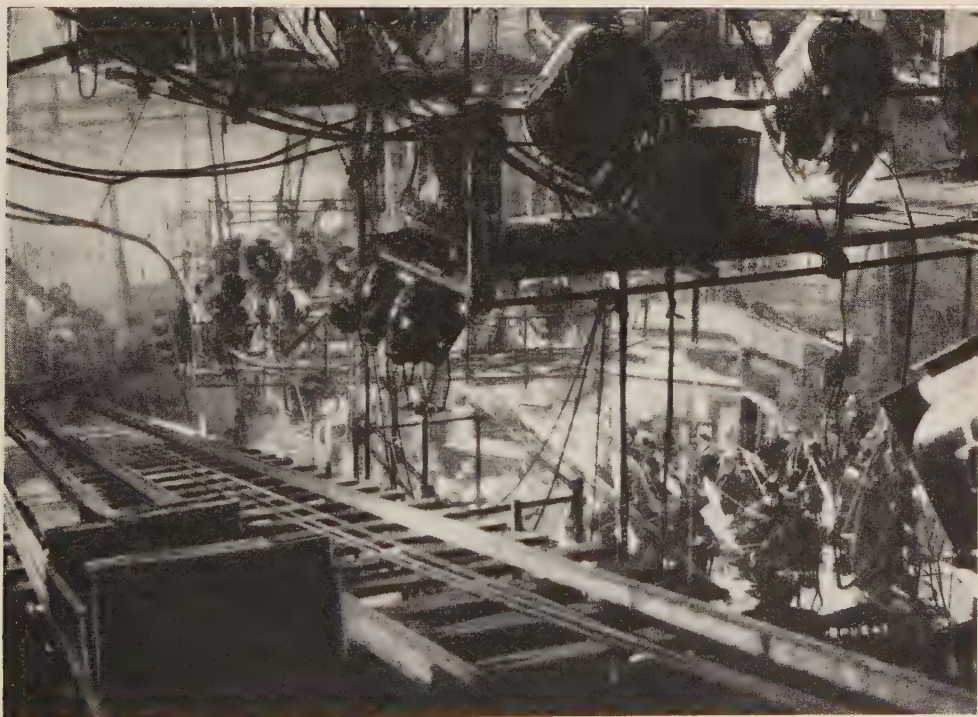


In the finished picture this appeared as a scene in eighteenth-century Germany, but if we had walked into the studio we should also have seen all the paraphernalia of a twentieth-century film studio. The lamps and other apparatus above the scene are of course outside the range of the moving-picture camera.

LOOKING DOWN ON THE SCENE IN THE STUDIO



It is sometimes necessary to photograph scenes from unusual angles. For this purpose a camera crane is used. Fixed on to the platform at the end of the crane arm, the camera, with the camera crew and director, can be moved in any direction.

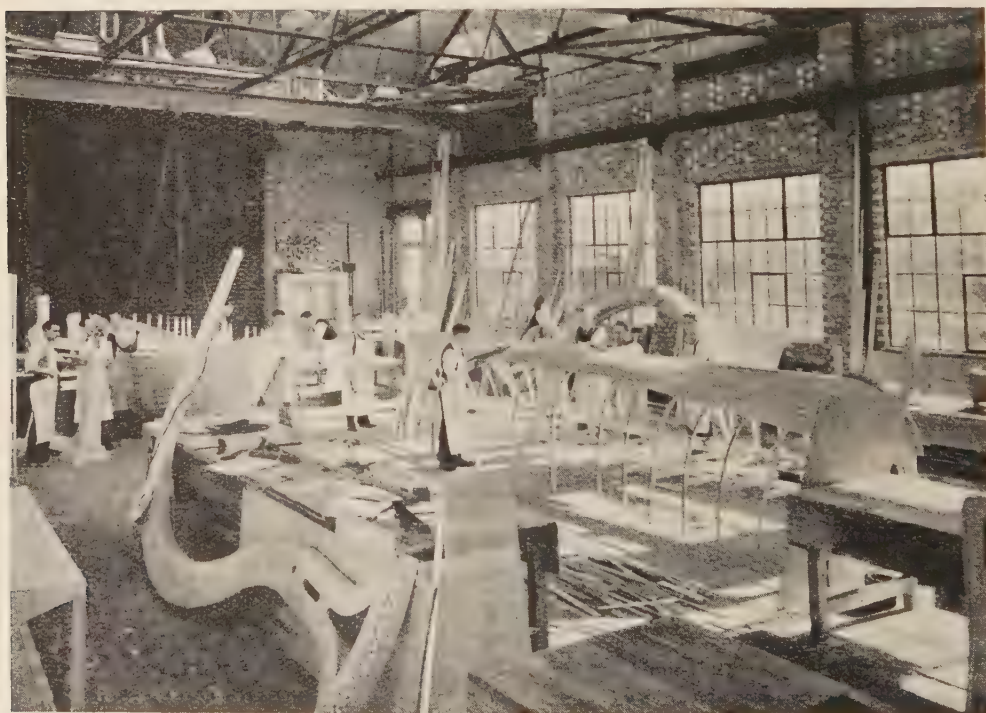


The camera photographs the scene which is to be part of the film, but if it were turned in other directions in the studio this is typical of what it would reveal—a maze of cables and lamps.

MAKE-BELIEVE IN THE FILM WORLD



It does not require a very vivid imagination to feel that we are inside one of the large rooms in a hotel situated high up in the Alps, when looking at this picture. Yet the scene was built up in a London studio with a huge photograph of an actual scene in the Alps used as a background.



The carpenter's shop is an important department, for here are built, under the direction of experts, not only the great variety of scenery used, but also many objects required in the films. Here we see some boats being made.

BELGIUM IN THE ENGLISH COUNTRYSIDE



On the double score of expense and convenience it is often better to construct a large outdoor scene than to go to the actual place which it is desired to represent in the film. On the left of this picture we see a square in a Belgian town, while on the right we see the flimsy framework on which the apparently substantial buildings were constructed. This scene was taken in the Hertfordshire countryside, while an interested crowd looked on.



Even where the place to be portrayed is quite near, it is often more convenient to construct the scene in the studio; and this though the scene may show for only a few seconds in the film. Here a scene at a railway station is being filmed

PALESTINE AND LONDON IN THE STUDIO



A popular technical device for reducing the cost of expensive sets is back projection. A previously-filmed background is projected on to a screen in the studio and blends in with the foreground constructed on the stage, as can be seen in this filming of an episode in the Biblical story of Ruth and Naomi.

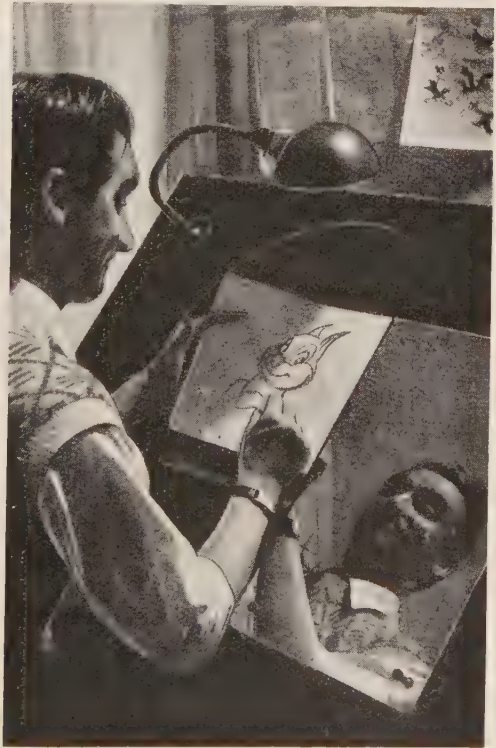
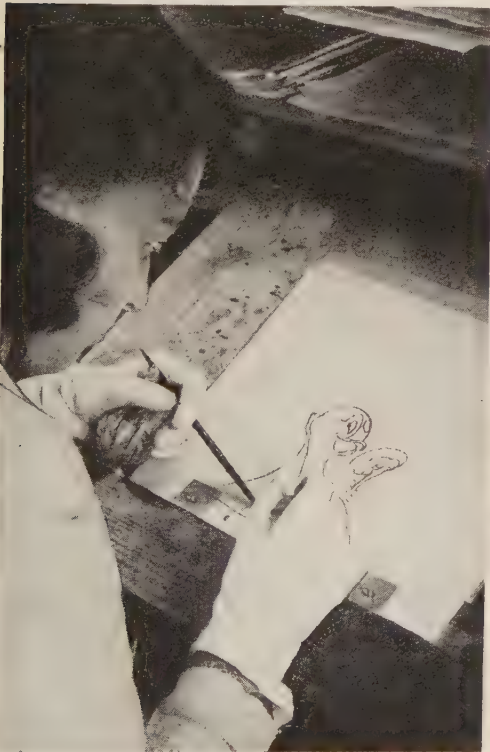


There is nothing in the picture on the right to suggest that it is not a London street scene, but the figures in the picture on the left, showing the scene being photographed, reveal that a model was used. A realistic accident in which the crane and the bus were involved on a stormy night was staged with the aid of this model.

TWO KINDS OF FILM IN THE MAKING



The travellers we see departing on a long-distance continental train, or on a ship, need not have gone farther than the studio. Here are two such scenes in course of production in a film studio in London.

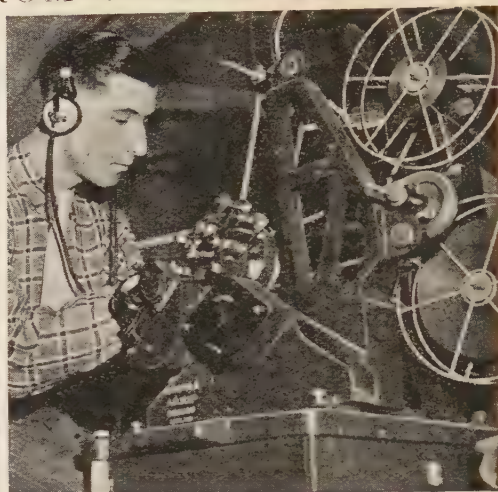


An animated cartoon is built up from a number of successive pictures thrown on to the screen at the rate of 24 a second. A film lasting ten minutes would thus be built up of 14,400 separate drawings. These pictures show artists at work on two of the characters in a series of British-made coloured cartoons. The man on the right uses a mirror so that his own reflection may suggest expressions for the character he is sketching.

MAKING A STORY FROM PIECES OF FILM



The sound and picture films taken during the previous day's work, having been developed and printed, are then synchronised, the girl operator being helped by the picture and sound of the clapper striking, as described on page 6706.



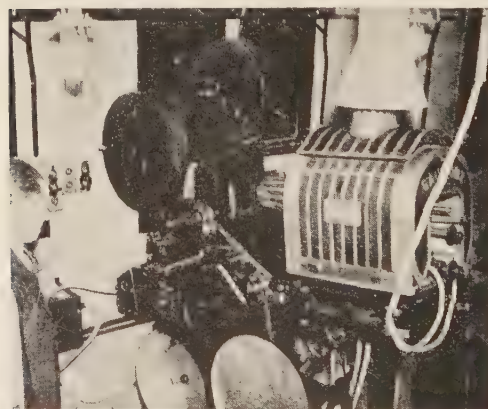
The film, approved by the director, is passed on to the editor, who gradually builds up the complete story, cutting out any surplus material. He uses a special machine with which he can stop or reverse the film at will.



When the editor has prepared his complete story the many pieces of positive film are welded together in this splicing machine. An identical version has then to be cut out and assembled from the original negative.



By means of a mixing panel a sound engineer can re-record the various sounds used in a film, such as dialogue, music, and sound effects, on to one strip of film. The panel enables him to vary the volume of each type of sound.



When editing is complete, the film is shown on a special projector, which can show separate sound and picture tracks simultaneously. Thus, any necessary alterations can be made to one without affecting the other.

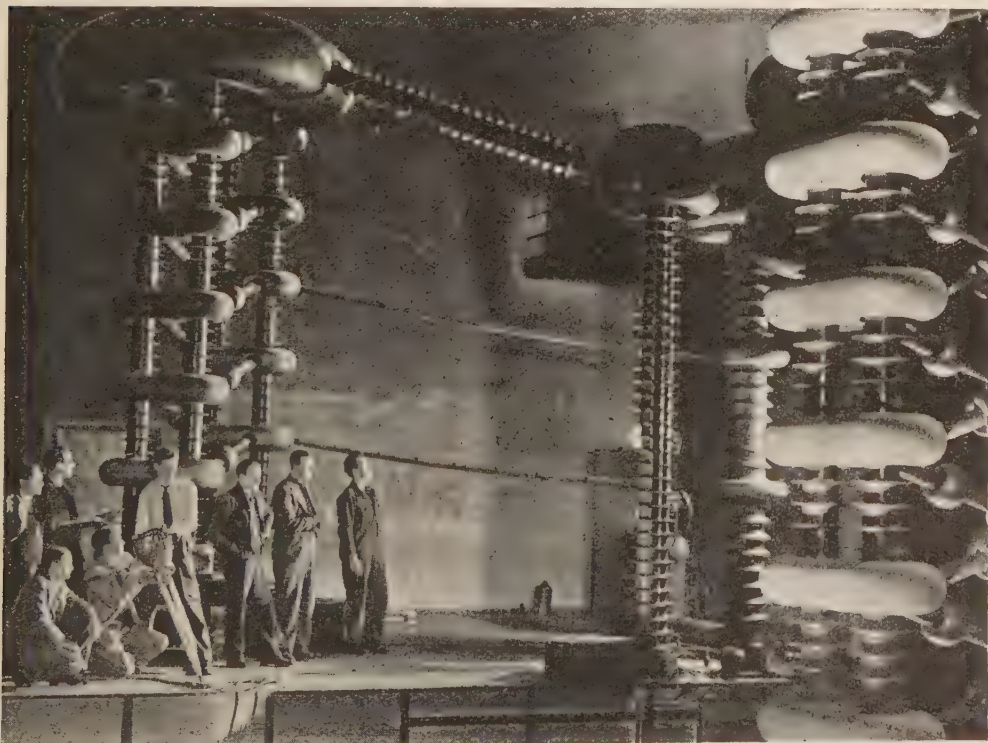


Here is a peep at a film vault, where numerous strips of sound and picture film are stored. Thus, almost any sound effects that may be needed can quickly be found, as well as extra "takes" of various scenes.

SPORTING AND INSTRUCTIONAL FILMS

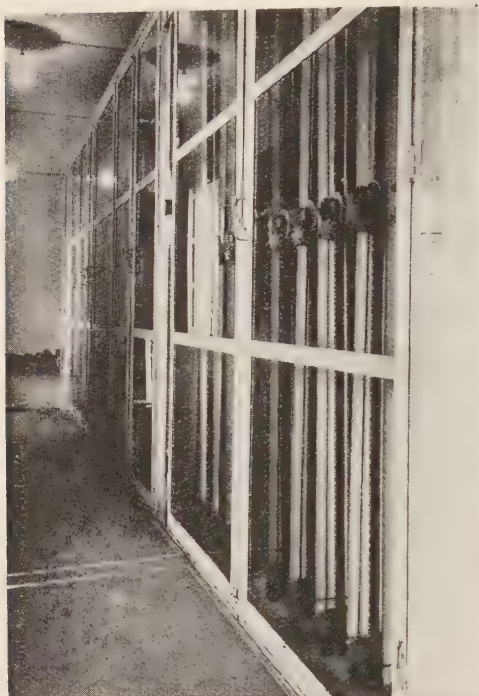


The cine-camera is a familiar sight at all big sporting events. In the picture on the left we see a camera being erected on the roof of a van for the filming of equestrian events, and in that on the right a cameraman on a 24-foot high steel tower is taking shots during an athletic meeting at Wembley Stadium in London.

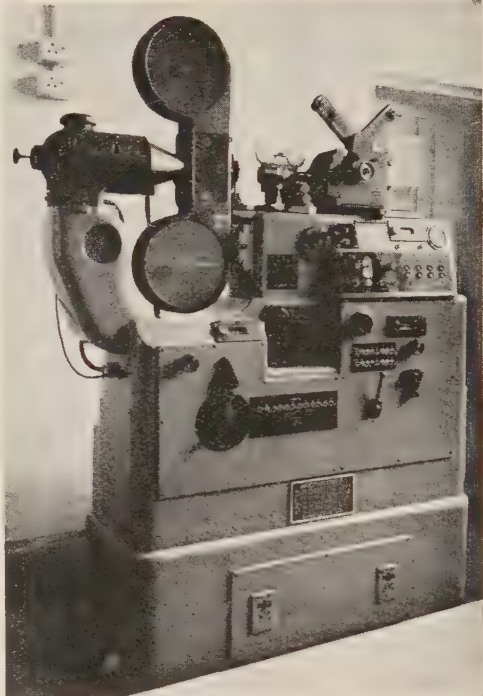


Films are being widely used for educational purposes in all kinds of schools, and instructive pictures have for many years found a place in the programmes of cinemas. Here we see a camera at work in the High Tension Room of the famous Cavendish Laboratory, Cambridge, while making a film on Atomic Physics.

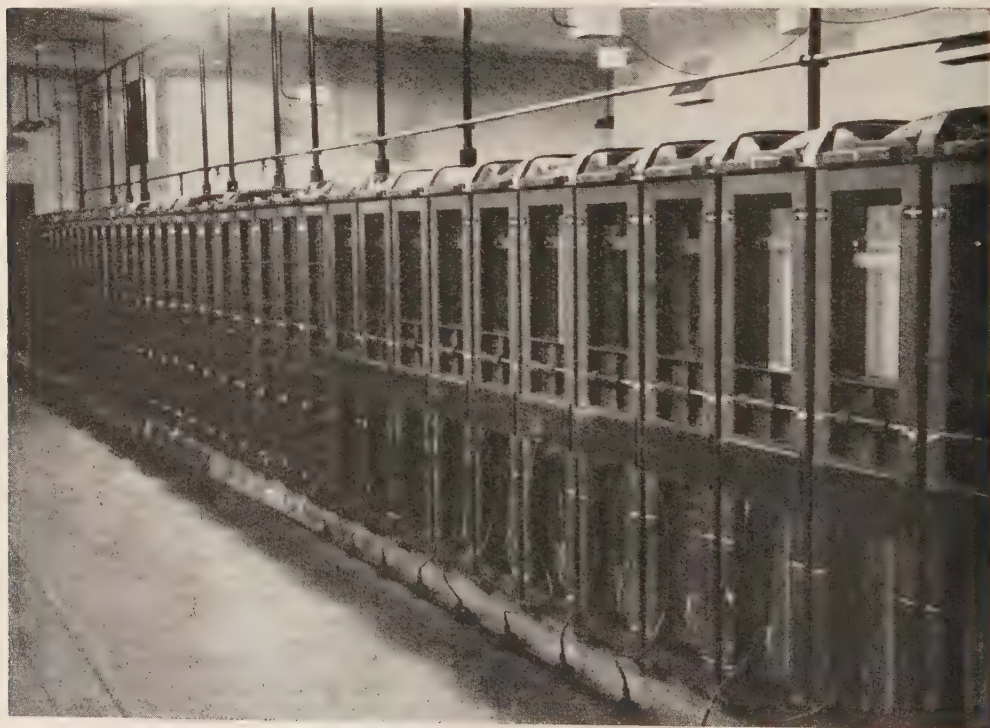
DEVELOPING AND PRINTING THE FILMS



This picture shows one of the principal methods of developing films today. The developing solutions are sprayed on to the films instead of immersing the films in tanks.

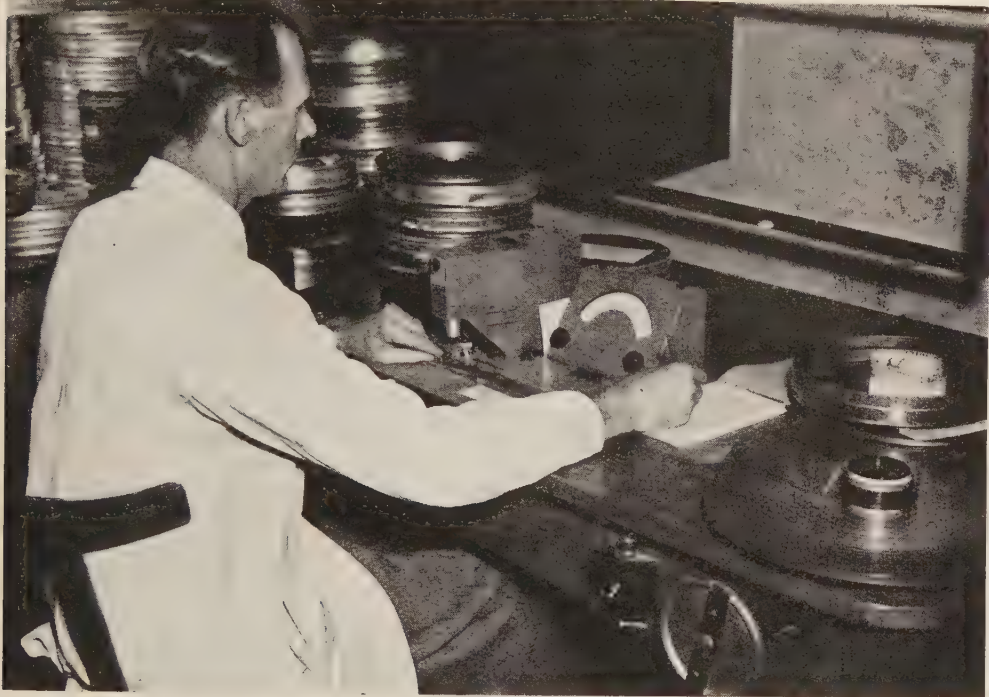


Here we see a film printing-machine which is used for all types of optical trick work. It can deal with 16-mm. as well as the standard 35-mm. films.

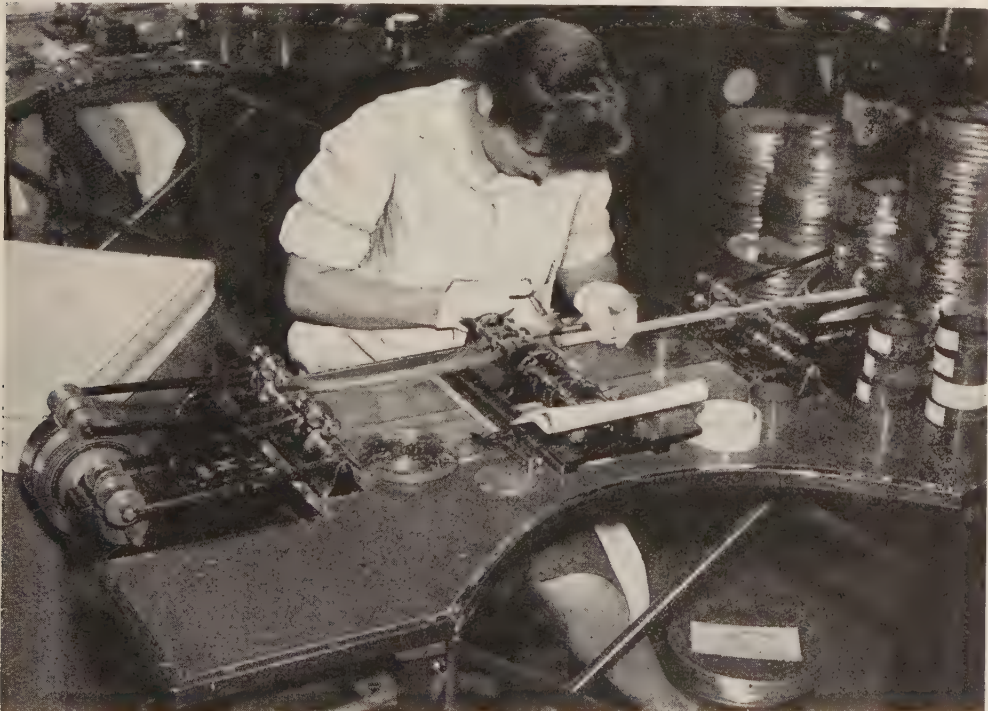


The modern developing machine seen in this picture is used for colour film. The film has to pass through a large number of tanks for this process. In course of time black-and-white films will probably become as obsolete as silent films.

WORKERS BEHIND THE CINEMA SCENES

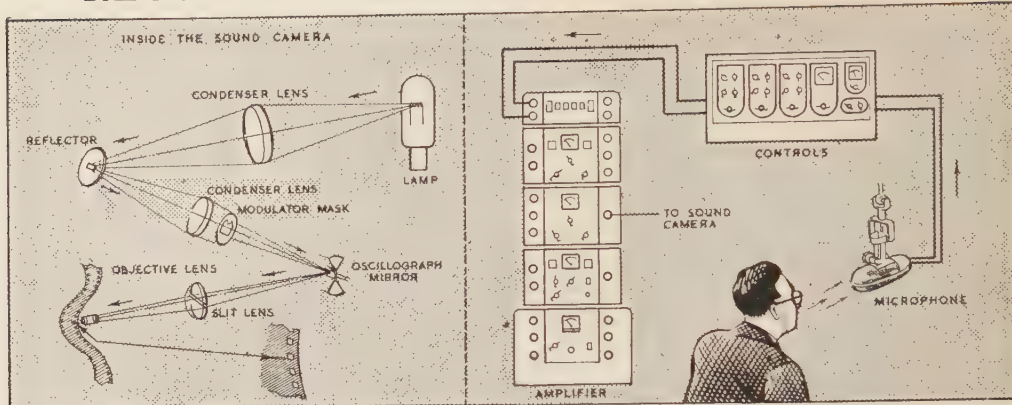


This picture shows a modern densitometer in use. This electrical instrument is used to measure density of image on the film in order that the picture on the screen shall be neither too light nor too dark.



In this picture we see film negatives being cut and joined. The girl wears gloves at her work and handles the film with the utmost care to avoid any risk of scratching the tiny pictures.

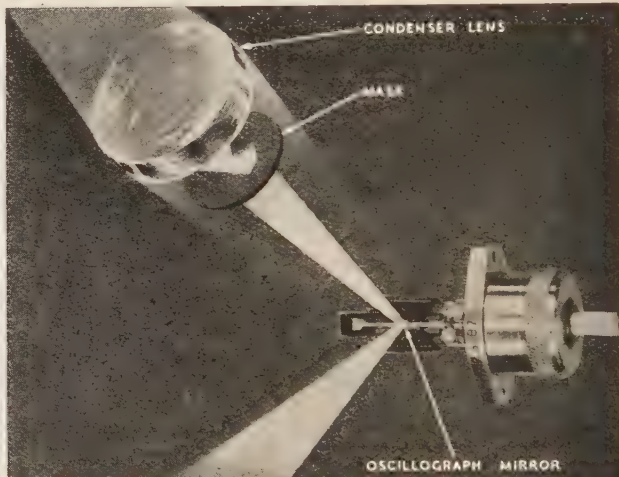
RECORDING THE SOUND FOR A FILM



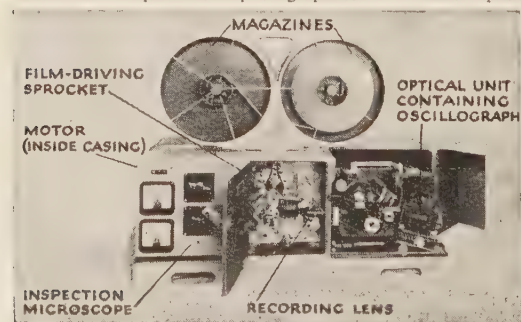
In producing talking films the sound is usually photographed on to the film simultaneously with the picture record of the action. The talker speaks into a microphone, which converts the sound waves into electrical impulses, as in the telephone. These are amplified, and cause a mirror to vibrate according to the variations of the electrical impulses. Light rays are directed through a lens on to the mirror, which is a part of the oscillograph, or modulating device. This mirror reflects the light on to another lens through which it passes to the moving film on which the photographic record is made.



The pictures and sound are photographed on separate films and mounted side by side, the sound film $1\frac{1}{2}$ inches ahead of the pictures. They are then developed as one film. Here we see the sound section on the left as two bands of light which are varied in area to make a picture of the sound waves, exactly as the electrical impulses were photographed.



Here is the oscillograph, which is a form of vibrator. A loop of wire is stretched into a kind of narrow hairpin with the two parallel sides very close together. Attached across the centre of the loop is a tiny oblong mirror. The ends of the loop are connected to the amplifiers, which strengthen the sound impulses, and the loop itself is suspended between the poles of a magnet. When the sound impulses arrive, the loop vibrates, and of course the mirror with it, so causing the reflected beam of light to dance up and down and thus produce sound-wave pictures on the film.

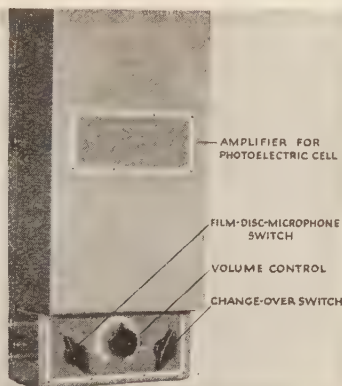
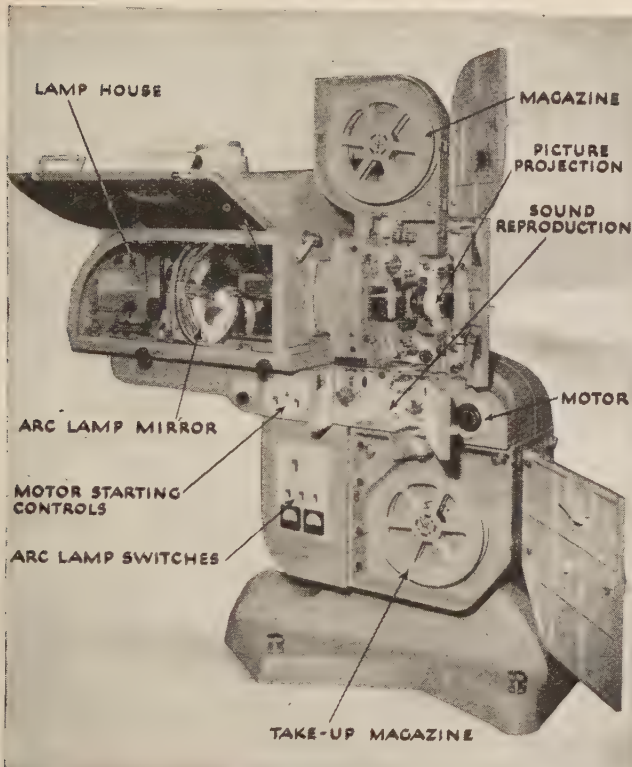


Here we see the sound camera which photographs the sound waves. The film placed in the right-hand magazine unwinds and passes before the lens, where the sound waves are photographed, and then into the left-hand magazine. The film moves constantly at a speed of 90 feet a minute.

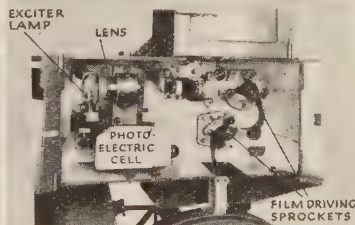


The studio is sound proof, and while scenes are being shot a man sits inside a sound-proof compartment, watching the action and listening carefully to the sounds picked up by the microphone. The control panel which he has before him is connected to the microphone, and he controls the volume and the quality of the sound.

HOW THE PICTURE IS PROJECTED

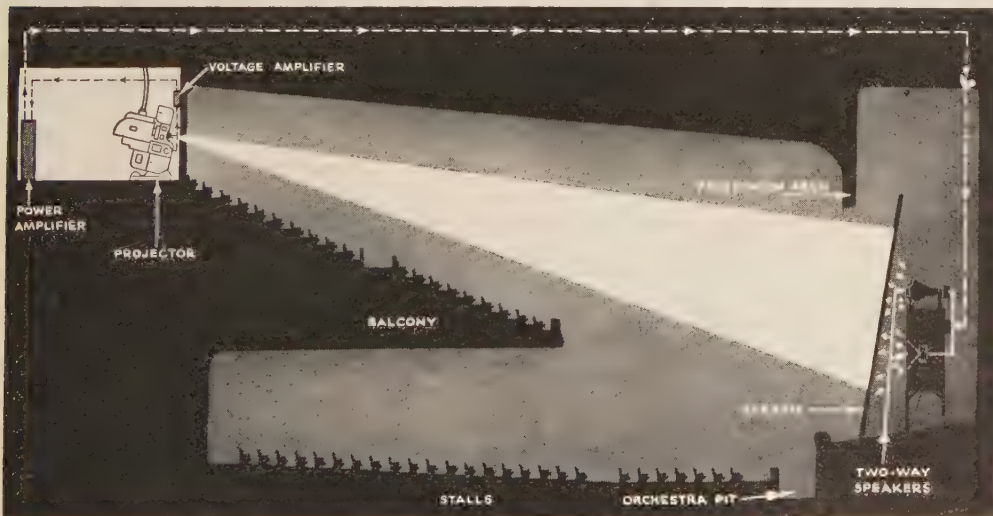


The switch marked Volume Control allows the projectionist to keep the sound at a constant pitch. The changeover switch enables him to change to another projector when he has reached the end of one reel. The left-hand switch is for playing records and making announcements.



This is the projector which presents the film in the cinema. The film is loaded into the magazine, the lights are switched on, and the film is set in motion. While the pictures are passing before the lens at the rate of 24 a second, the corresponding portion of sound-film is passing steadily before the sound projector below. As the soundhead is below the picture lens we see why the sound film has to be placed $14\frac{1}{2}$ inches ahead of the pictures.

When the sound film is reproduced, light passing through lenses is focused on to the film. The light rays passing through the film are modulated by the area of the sound track and directed on to a photo-electric cell, where the light waves are converted into electrical impulses and then amplified.

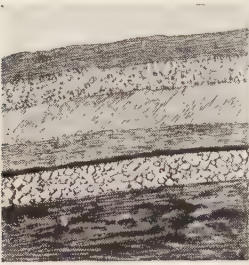


This elevation gives an impression of the arrangements in a cinema. The sound waves amplified in the projector cabin are passed by wiring through the theatre to loud speakers behind the screen. The screen is perforated to allow the sound waves to pass through and be heard without muffling by the audience. Two-way speakers give correct rendering to the upper register (such as consonants in speech), and to the lower register (for example bass instruments in orchestras), and so render a truer balance of sound.

Pictures on these pages are by courtesy of companies within the J. Arthur Rank Organisation.

A DIAMOND AND ITS STORY

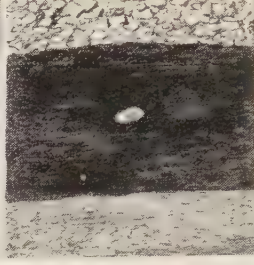
For thousands of years men and women have sought after diamonds and have paid fortunes to obtain them. At one time all diamonds came from India, and when these gems were found in Brazil they had to be sent to India and sold from there as Indian diamonds, because people did not believe that Brazilian



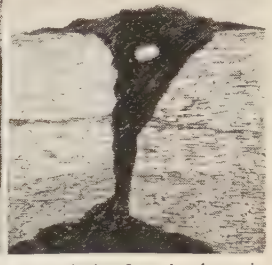
A million years ago a mass of iron and carbon lay mixed together in the earth's crust, with enormous pressure upon it.



By some means the substances became molten at a great depth, and a drop of carbon floated in the liquid iron.



Gradually the mass cooled, and the drop of carbon became a crystal, which we now know to be a diamond.



An explosion forced a channel to the surface of the earth, and volcanic mud containing the diamond was forced up.



Water passed over the place later and gradually washed away the earth, carrying the diamond with the mud.



Other mud was deposited on top of the diamond, and centuries later this had become hard rock beneath dry land.



One day men came and dug out the earth, including a piece of rock which contained the diamond.



The rock was spread out in the sun and left for months, till it had become less hard and more easy for crushing.



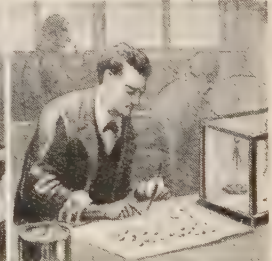
It was then taken to a factory, where the piece of rock containing the diamond was crushed with similar pieces.



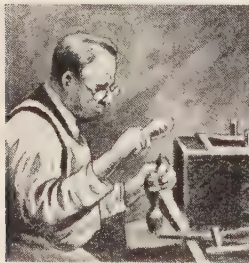
Next the crushed rock was washed round and round till all the heavier fragments, including the diamond, had sunk.



The fragments were then passed with water over a series of greased tables, the diamond sticking to the grease.



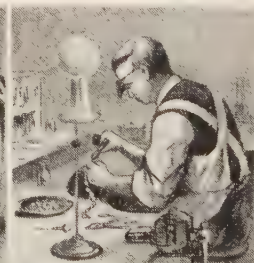
The diamond, with others, was sorted out, washed, weighed, and valued, and then packed and sent to Europe or America.



It was next handed to a diamond-cutter, who cut away the flaws and gave it facets so that it would scintillate.



After being cut it was polished on flat metal discs, fed with diamond-dust and oil, and revolved at great speed.



It was then mounted, with other diamonds, by a jeweller, who made it the chief stone in a beautiful necklace.



And when a lady wore it the diamond was admired by all, though how many who saw it could guess its ancient history?

diamonds were genuine. The biggest find of diamonds has been in South Africa, where stones worth more than 16 million pounds have been taken out in a single year, although production for many years has been considerably less than this. The Cullinan diamond, biggest ever found, came from a mine in the Transvaal.

Plain Answers to the Questions of the Children of the World

How Far We See When Our Eyes are at Various Heights

1...1 $\frac{1}{2}$	14...5	60...10 $\frac{1}{2}$	130...15	600...32 $\frac{1}{2}$
2...1 $\frac{1}{2}$	16...5 $\frac{1}{2}$	65...10 $\frac{1}{2}$	140...15 $\frac{1}{2}$	650...33 $\frac{1}{2}$
3...2 $\frac{1}{2}$	18...5 $\frac{1}{2}$	70...11	150...16 $\frac{1}{2}$	700...35
4...2 $\frac{1}{2}$	20...6	75...11 $\frac{1}{2}$	200...18 $\frac{3}{4}$	800...37 $\frac{1}{2}$
5...3	25...6 $\frac{1}{2}$	80...12	250...21	900...40
6...3 $\frac{1}{2}$	30...7 $\frac{1}{2}$	85...12 $\frac{1}{2}$	300...23	1000...42
7...3 $\frac{1}{2}$	35...8	90...12 $\frac{1}{2}$	350...24 $\frac{3}{4}$	2000...59 $\frac{1}{4}$
8...3 $\frac{1}{2}$	40...8 $\frac{1}{2}$	95...13	400...25 $\frac{1}{2}$	3000...72 $\frac{1}{2}$
9...4	45...9	100...13 $\frac{1}{2}$	450...28	4000...83 $\frac{1}{2}$
10...4 $\frac{1}{2}$	50...9 $\frac{1}{2}$	110...14	500...29 $\frac{1}{2}$	5000...93 $\frac{1}{2}$
12...4 $\frac{1}{2}$	55...10	120...14 $\frac{1}{2}$	550...31	5280...96

The first figure is the height in feet, up to a mile; the second is the rough distance seen in miles (not exact to small fractions).

HOW FAR CAN WE SEE ?

WHEN we say that our eyes see, all we really mean is that light has entered them, and has affected them. If that happens, we see. It does not matter whether the light has been produced by a match that someone has held in front of our eye, or whether the light has come from a star so distant that its light took ten thousand years to reach us. In either case, if light enters our eye in sufficient quantity to affect it, we see. The answer to our question, therefore, is that our eyes can see to any distance from which light can reach them. The question whether the light has travelled billions and billions of miles, or only half an inch, makes not the slightest difference to our eyes.

It is quite a distinct question at what distance our eyes can distinguish the details of a particular thing. This depends on many things, but it can be reckoned to some extent, and it is very important to do this for the case of different telescopes. We know that, if there were any building on the Moon as large as St. Paul's, it could be recognised in our best telescopes.

Standing at any given point, we can usually see what is called the horizon, from the Greek word *horos*, which means a boundary, and in this case means the boundary between the Earth and the sky. We understand, of course, that the line we see on the horizon is not really the

boundary between Earth and sky, but merely the boundary between them as they appear to our eyes.

As we stand by the seashore, the sky and the sea seem to meet. We can see a line which seems to be the end of the sea and the bottom of the sky. That is the horizon. Similarly, if we stand on a plain of land we can, if there are no trees or houses, see where the end of the land seems to touch the bottom rim of the dome we call the sky. That also is the horizon.

Its distance depends on how high our eyes are from the level of the sea if we are looking across the sea, or from the level of the land across which we are looking if we are looking over a plain. A boy standing on the shore looks out on the sea from a distance about four feet higher than the level of the sea—the height of his eyes from sea-level. He can see just a little more than two and a half miles in front of him, and his horizon is just this distance away. The eyes of a boy on the edge of the cliff, on the other hand, are 100 feet above sea-level, and he can see about 13 $\frac{1}{4}$ miles off, and that is where the horizon is. Again, the top of a lighthouse is 150 feet above sea-level, and a boy looking out on the sea from this point would see about 16 $\frac{1}{4}$ miles, his horizon being 16 $\frac{1}{4}$ miles away.

The scientific explanation of all this would be that “range of vision is deter-

mined by the altitude of the observer." In simple language, this means that the higher up we are the farther we can see. That is because our world is a globe. Perhaps we can understand better how this is if we stand in front of a row of houses forming a bulging crescent. Stand close to one of the houses, and turn your head first to the right, and then to the left. You cannot see much of the row of houses, perhaps only a little bit of the house on each side of the one of which you stand in front. Step back into the middle of the road, and look again. Now you can see a good many more of the houses, but still not all if the row is long. Then cross to the far side of the road, and many more will be found to have come within range.

To look for the horizon is much the same thing. The Earth is round, and the farther we are above the ground along which we are looking, the farther we can see. The table on page 6719 shows how far anyone can see at various distances from the Earth's surface. At one mile high we can see 96 miles. The figures are generally correct, but not quite exact, as the table is drawn up for simplicity, and so avoids small fractions.

Why Does it Rain so Much in Scotland?

This is one of those difficult questions about the weather which no one can fully answer. One of the great causes of rain is the existence of much water for the Sun to draw up, and so any island is far more rainy than the interior of a continent, such as the Sahara Desert. That applies to the whole of the British Isles. But the rain that falls in our islands is principally brought from the greatest expanse of water near them, which is the Atlantic Ocean. So it is chiefly the "warm, wet western wind" that brings the rain. It deposits the rain most where it is most cooled, and as Scotland is farther north than England it is colder; and so its climate condenses more rain than the climate of England does. Scotland also has a very broken west coast, so that the water of the sea comes far up into the land, as in the case of the Clyde, round which there is more rain than anywhere else in Scotland. The west coast of Ireland is very rainy, too, and Ireland catches part of the rain which would otherwise fall on England. Scotland, again, is very hilly and mountainous, and air is cooled in rising over hills, and so

deposits much of its moisture as rain. Of course, the east coast of Scotland is far drier than the west, for when the west wind reaches it, it has already spent most of its moisture farther west.

Why is it Easier to Swim in Salt Water Than in Fresh?

The answer depends wholly on the heaviness of our bodies as compared with the heaviness of the water. Our bodies are more than three-fourths water, but most of the rest is heavier than water. The fat of our bodies is lighter than water, and so helps us to float. Now, fresh water is less heavy than salt water, and so our bodies, though only a little heavier than it, tend to sink in it. Ordinary sea water is heavier than fresh water, because it contains a lot of salts melted in it, just as the water of our own bodies does; so we find it easier to float and swim in sea water. But in some parts of the world there is water that is much saltier than even sea water; this is the case, for instance, in the Dead Sea, and we have all heard of the Great Salt Lake in America. There is so much salt in the water of the Dead Sea that it is actually heavier, on the whole, than our bodies are, and you cannot sink in the Dead Sea! On the other hand, there are some liquids much lighter than water, and if a man were to fall into a lake of one of them he could not swim at all, however good a swimmer he was, for his body would sink like a stone.

Who was Empedocles?

In the fifth century B.C. Agrigentum, now called Girgenti, was one of the largest and most flourishing Greek cities in Sicily, and the fame of its great philosopher, Empedocles, added much to its glory. Empedocles, who lived from about 490 to 430 B.C., was also a poet and statesman, and his wealth, eloquence, and wisdom gave him immense influence in his native city, where he supported the democratic party. In his teachings he followed Pythagoras and Parmenides, but he claimed also to have magical powers, and the gifts of prophecy and healing. The people came to regard him as an almost superhuman being, and all manner of legends were told of him. He is said to have thrown himself into the crater of Etna in order that his sudden disappearance might induce the people to think him a god.

WHAT DO THE WORDS ON A WEATHER MAP MEAN ?

There are many strange-looking words on a weather map, and if we are to understand the weather report we must know their meanings.

Perhaps the most familiar are the words beginning with *iso*. This prefix means equal, and the words are used of certain irregular curved lines appearing on the map. Some of these are called *isobars*, and join up places of equal barometric pressure, that is to say, places where the reading of the barometer is the same. *Isotherms* are the lines joining places of the same temperature, the word meaning equal heat. *Isohels* are lines showing equal duration of sunshine, *hels* being from the Greek word *helios*, meaning the Sun. *Isohyets* are lines showing equal amounts of rain, *hyets* being from *heutos*, meaning rain. *Isodynamics*, a word meaning equal power or force, is used in two senses. It may mean lines connecting places where the intensity of the Earth's magnetism is equal, or lines joining places where the winds are of a specified force.

A *cyclone* in a weather chart does not mean a raging tornado; it is simply the name given to a region of low barometric pressure, that is, a region where the pressure of the air is less than that round about. The result is that air from the surrounding regions of high pressure pours in and so there is a movement of the atmosphere in which the wind blows spirally round and in toward a centre. This movement may be gentle or rapid, and general or local. When it is gentle, it is quite as truly a cyclone as when it is dangerously rapid. A cyclone in this sense is also called a *depression* (or a low).

An *anti-cyclone* is a region in which the barometric pressure is high, or greater than that of surrounding districts; and it is generally shown on a weather chart by roughly circular or oval curves representing the isobars. The wind blows spirally outwards, the region of highest pressure being the central region of the anti-cyclone. The word anti-cyclone, of course, means the opposite of a cyclone, and sometimes the word high is used instead of anti-cyclone.

A *V-shaped depression* is the expression used to describe isobars having the shape of the letter V, which enclose an area of low pressure. The point of the V is always to the south or the east. A *barogram* is

the continuous record of atmospheric pressure made by a barograph, or a self-recording barometer. In the same way an *anemogram* is the record of an anemograph, an instrument recording the speed or force of the wind, the Greek word *anemos* meaning the wind. *Katabatic* (made up of two Greek words meaning going down) is a word used in weather reports to describe the downward motion of the air. A local cold wind is called katabatic when it is caused by cold air descending from high ground by gravitation.

Veering is the changing of the wind in the direction of the motion of the hands of a watch; the opposite is called *backing*.

Aerology is a word which has come into use in recent times to indicate that part of meteorology which is concerned with the study of the upper air, a study carried on by means of small free balloons filled with hydrogen gas. They are released, and by following their progress with the help of a specially designed theodolite, knowledge is gained of the wind currents at great heights.

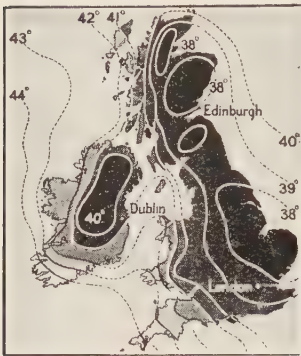
Humidity, a familiar word for dampness, is used in meteorology to describe the amount of water vapour in a measured volume of air. The term *saturation*, when applied to the air, means that the air contains as vapour all the moisture it can possibly hold at that temperature.

Phenology is a term used to describe the study of the natural changes taking place from season to season, and it includes all natural phenomena, such as seed-times, harvests, flowering, ripening, migration, and so on; but in practice it is often limited to the times on which certain trees and plants come into leaf and flower each year, and to the dates of the first and last appearance of birds and insects.

Insolation is a word used to describe the solar radiation received by the Earth and other planets. A *pentad* (Greek for five) is a period of five days. Five-day averages are used in meteorology because five divides into 365, the number of days in our year.

Serein is fine rain falling from an apparently clear sky; a *line-squall* is a squall of wind accompanied by rain or hail, associated with a sudden drop of temperature and the passing of a long line of dark cloud.

TEMPERATURE MAPS OF THE BRITISH ISLES



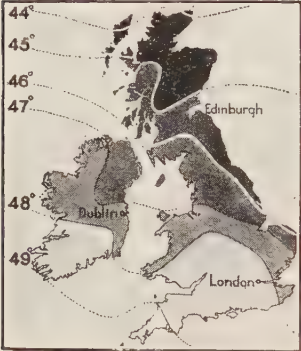
JANUARY



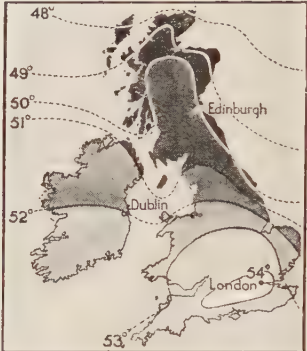
FEBRUARY



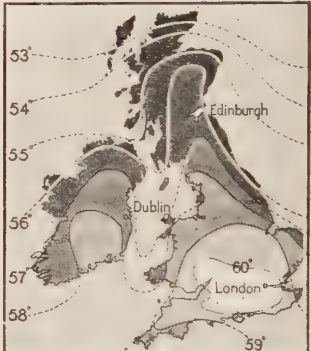
MARCH



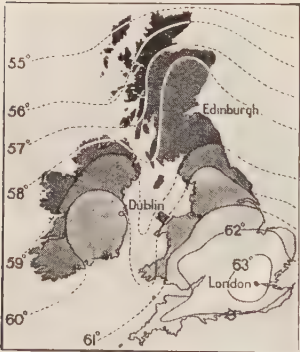
APRIL



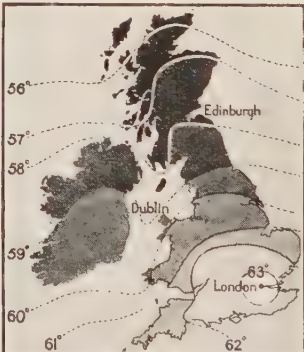
MAY



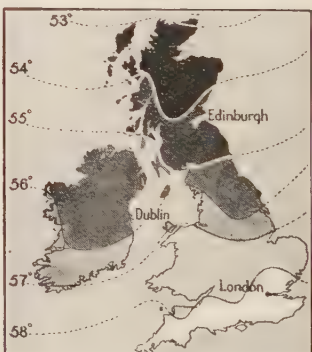
JUNE



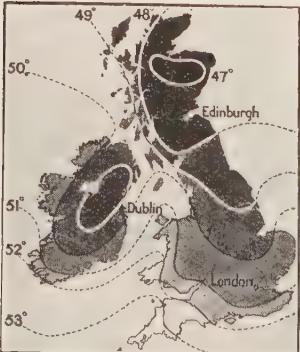
JULY



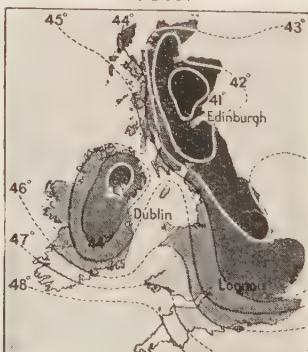
AUGUST



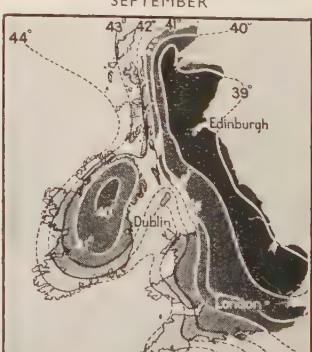
SEPTEMBER



OCTOBER



NOVEMBER



DECEMBER

In these maps the figures show the average temperatures and the lines enclose areas of equal warmth

RAINFALL MAPS OF THE BRITISH ISLES



JANUARY



FEBRUARY



MARCH



APRIL



MAY



JUNE



JULY



AUGUST



SEPTEMBER



OCTOBER



NOVEMBER



DECEMBER

In these maps the figures show the average rainfall in inches for the areas marked

Can the Planting of Grass add Acres to England ?

It has been found that the cultivation of rice grass enables derelict mud banks to be reclaimed in a way which is not otherwise possible. Acres of marshy land on our East Coast have been planted with this strong-growing plant, which holds the sediment deposited on it through floods and binds this newly-acquired material so that the level of the mud flats is gradually raised. The grass, too, forms good food for grazing animals, both as fresh grass and as cut hay.

Could a Wireless Wave Go Round the Universe ?

A wireless wave, whether regarded as a vibration or an assemblage of electric particles, would, when once started on its journey, continue its path without ceasing unless impeded on its way. A wireless wave will go round the world because it is continually reflected back from a kind of electric layer miles above the Earth's surface. But if we ask whether it can similarly go round the Universe we have to consider whether it is true, as some 20th-century mathematicians have declared, that the Universe is a sphere.

Some doubt on this idea has been cast by Professor Einstein, who lent his support to it, but declared later that it was impossible to determine mathematically the curvature of such a sphere. Consequently it is quite as likely that space is boundless and our wireless wave could go on for ever, never returning on itself as it would if it were travelling round a spherical universe.

It may be worth while to consider what would be the radius of a spherical universe if we allow ourselves to believe that such is its shape and to ask also why we should think that it may be. The width of the great galaxy of a thousand million stars to which we belong is 100,000 light-years. Multiply that figure by six billions and we have its diameter in miles. If our wireless wave had only to travel round that spiral it would return on itself in something over 300,000 years.

But beyond our spiral are other spiral universes, the nearest 850,000 light-years away. There are many beyond them. Does this distribution also come to an end, or are there other super-systems beyond? There is one ray of light on this dark prob-

lem. These spiral universes seem to be hurrying away from us at speeds sometimes approaching 1000 miles a second. Why do they appear to do so? A possible answer is that the vibrations of light coming from them deceive us and have really travelled round a large portion of a spherical universe before reaching us instead of coming in a direct line.

On that theory the radius of space, or let us say the Universe, can be calculated as 20 times the average distance of the nebulae, or say 100 million light-years. A ray of light or a wireless wave would take something more than six times that number of years to travel round.

How Did the Great Silence Begin ?

The keeping of a two-minute silence on Remembrance Day was an application of an old idea to a very solemn occasion. The idea of the Angelus bell with its call for a brief respite for silent prayer, is but one of the examples of the spiritual values of silence. Two-minute silences were observed at all the meetings of the Anglican Conference in London in 1906, and before then the Society of Friends had always stressed the value of silence for meditation. The originator of the Silence on Remembrance Day was Edward Honey, an Australian reporter working in Fleet Street, who wrote an article about it. This was read by the South African statesman Sir Percy Fitzpatrick, who asked Lord Milner to convey the proposal to King George the Fifth, who authorised its adoption.

Who Suggested the Idea of the Unknown Warrior ?

The man who first realised the consolation to the bereaved which would result from the burial of an unknown victim of the First World War in Westminster Abbey was David Railton. He was a curate at Folkestone who had served in France as a chaplain. Later he became Vicar of Margate and of Bolton, near Bradford. Mr. Railton took his suggestion to the Dean of Westminster, who placed it before the Cabinet. The Union Jack which hangs above the grave in the Abbey is the very flag which David Railton used in France as a pall for the bodies of the soldiers he buried. It is one of the very few British flags which were taken to France during the war of 1914-18.

Is the Stuff in Earth and Air and Sea Always Changing Places ?

The answer to this is certainly Yes. There is a ceaseless circulation going on between the surface of the land and the water, and the bottom layers of the ocean of air which covers them both. Wherever water is, for instance, it is often being sucked up in the form of a gas into the air, of which it then forms part; while, on the other hand, water vapour from the air often passes from it to the Earth—as, for instance, in the form of dew. Then the gases of the air, especially oxygen and carbon dioxide, are ceaselessly passing between it and the bodies of all the living creatures on the Earth; and from moment to moment, various gases are either leaving the air to be dissolved in the ocean, or are leaving the ocean to join the air.

Why is Geneva the International City ?

It is not a particularly big city, nor a wealthy one, nor vastly important in the world's affairs. It cannot be called particularly central. Why, then, is Geneva international, and why was it given the honour of becoming the home of the League of Nations formed at the end of the First World War ?

From earliest days it loved freedom, and its citizens never submitted to becoming the vassals of feudal lords; but for many centuries it had no importance. The change came suddenly and swiftly. The Reformation, spreading over Northern and Central Europe, came to Geneva and, as in many other places, it came with violence. Calvin, one of the great men of history, was the leader of it. He was a terribly stern leader. He set himself to mend the manners and morals of the people as well as to reform their faith. He drew up a set of rules, stricter than in any school, and anyone who broke them was brought before a solemn council of pastors and churchwardens and punished with great severity. Those who sang gay songs, or danced, or dressed up, were put in prison for three days on bread and water; those who forgot to say grace before and after meals were fined forty shillings; no one might wear gold or silver chains, embroidered clothes or ornaments of any kind.

In reforming their faith he was still more strict and, following the approved

method of the time, his actions were cruel indeed. He scourged the townsfolk, he burned the heretics, but he did what he intended to do. He transformed Geneva from a little unimportant town, of no particular interest to anybody, into the great centre of Protestantism. He did a good thing in a bad way.

It was the beginning of the city's international fame. People from all lands flocked to it. From England and Scotland came those whom Queen Mary would not allow to live in peace. From France and Italy came distinguished poets and preachers, attracted by its reputation of learning. John Knox, who spent several years there, described it as "the most perfect school of Christ that ever was in the Earth since the days of the Apostles." The massacres of St. Bartholomew's Day sent refugees flying in terror from the French towns, and Geneva opened her gates to them, her purse, and her heart.

Whenever there were riots and revolutions anywhere, Geneva was the city of refuge to which the persecuted fled.

No other city has such a history of open-hearted hospitality. Its spirit is truly international.

What is the Acropolis ?

Acropolis was the name given to the highest part of cities in ancient Greece, the part surrounded with fortifications, sheltering temples, statues of gods, and all that was precious to the people. Most of the towns of Greece, of Asia Minor, of ancient Italy, had their Acropolis, and important ruins remain for our admiration. The most famous, the richest in buildings, and also the best preserved, is at Athens. It covers the top of a hill 900 feet long and 450 feet wide, spread with temples, masterpieces of the celebrated artists of the great time of Pericles. There was the Parthenon, erected to Minerva, patron goddess of Athens; the Erechtheum, with its beautiful Porch of the Caryatides; the Propylaea, a monumental vestibule of columns leading to all the shrines. No other place in ancient Greece had such sacred and glorious memories. The Acropolis was almost entirely spared until the seventeenth century, but in 1656 the explosion of a Turkish powder-store destroyed a part of it. Most of it is now in ruin, destroyed by war and centuries of neglect.

Does a River Ever Flow from the Sea into the Land ?

Now and again we find such queer things happening, and at Argostoli, the pleasant capital of Cephalonia, one of the Ionian islands, there is a phenomenon which practically amounts to this. On the west side of the harbour is a stream of sea water which flows at two miles an hour for about 150 feet inland, and then disappears amid clefts and fissures in the limestone rock. Where the water goes to is a mystery, but the local inhabitants say it goes far down to the heated rocks and comes out as steam from Vesuvius and Etna. Others think it is dried up by the internal heat of the Earth. It is a curious phenomenon, unlike anything else in the world. The stream is a regularly flowing river of salt water, and was for years used to work two mills known as the Sea Mills, but unfortunately the mills have fallen into decay. The river goes



SEA WATER RUNNING INLAND AT ARGOSTOLI

on flowing from the sea into the land, however. The channel shown in the photograph is an artificial one cut many years ago.

Who was Lohengrin ?

Lohengrin, also called the "Knight of the Swan," is the hero of an old German poem of unknown authorship, borrowed from the romances of the Round Table. Lohengrin, Parsifal's son, having discovered the Holy Grail in India, was one of the knights entrusted with its keeping. Sent from King Arthur, in an aerial chariot drawn by a swan, Lohengrin set off to Mayence in order to assist Elsa, the Duke of Brabant's daughter, against her enemy Tetramund. Lohengrin vanquished Tetramund, set Elsa free, and married her, but the severe law ruling the Holy Grail

knights forbade their ever revealing their names and origins. Elsa, amazed at her husband's valour against Hungarians and Saracens, begged him again and again to let her know something of his past. Lohengrin refused at first, but he yielded at last and told the Princess who he was. Alas! on the very instant, the famous swan reappeared before the hero, who had to start back to India in his aerial chariot while Elsa was dying with grief. The Lohengrin legend was used by Richard Wagner in one of his finest operas.

What was the Code Napoleon ?

Before the Revolution in 1789 there was no consistent law system in France. Each province had laws to itself, and the result was great confusion. Napoleon had been struck by this involved state of things before he was Emperor, and he thought much of establishing one law throughout France. When on the throne he proceeded with his plans, and, appealing to the most famous jurists of his time, he had a scheme prepared. Under the Emperor's direction, the Council of the State undertook the task of collation, and a civil code of laws was published ruling the private relations between all French citizens and their obligations towards society.

Not only in France, but in many other nations, this Code of Laws is now in use, and it brings to Napoleon more true honour than any other of his deeds.

Why did the Egyptians Worship Crocodiles ?

The reason why crocodiles were an object of veneration to the Egyptians is rather obscure. Some people pretend that it was a token of gratitude to crocodiles because their ferocity preserved the Egyptians against plunderers, who dare not cross the Nile for fear of being devoured. Others think the Egyptians had noticed the relation of the reappearance of crocodiles to the recurring floods of the Nile, which are a chief cause of the wealth of the country. The superstitious natives put down to the crocodiles the merit of this natural phenomenon. On the other hand, scholars have pointed out that crocodiles figured on Egyptian monuments were not the cruel species we know, but small, gentle animals of the same family, which could easily be tamed, and lived in the gardens, commonly mixing with people, who fed them by hand.

What is the Longest Land Animal that Has Ever Lived ?

So far as we know this must have been one of the giant dinosaurs of the Jurassic Age, the *Diplodocus Carnegii*, the remains of which were excavated in Wyoming, U.S.A., and are now in the Carnegie Institute at Pittsburg. A picture of a reconstruction of this appears on page 453. Longer and much bulkier are some of the blue rorquals or fin-whales. The Indian variety of the Sibbald's fin-whale has been known to attain a length of almost 100 feet. The *Diplodocus* found in Wyoming must have measured over 80 feet.

It was a queer creature, for it had a very small head and a short body, with an enormously long neck and tail. The neck was 20 feet long, and it was carried so high that a man could have easily walked under it without bending his head. The body, though short in comparison with the total length of the animal, was bigger than the body of the biggest elephant living today, and the back was about fourteen feet from the ground. The small head was furnished with very slender teeth, and there is no doubt *Diplodocus* was a vegetable feeder. Probably it was an aquatic creature, living on seaweed.

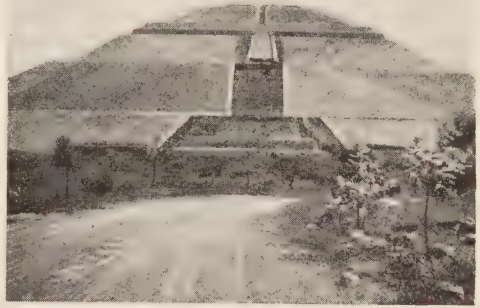
The name *Diplodocus* is made up of two Greek words, *diplos*, meaning double, and *dokos*, a beam, so that the name means double-beam, a reference to the bones covering and protecting the blood-vessels on the lower face of the tail which consist of two separate bars each, slung in the middle, an arrangement unknown in any other animal at the time the dinosaur was discovered. It was named after Andrew Carnegie, whose generous gifts enabled the excavations to be made and the remains to be preserved. Carnegie presented a complete reconstruction of the skeleton of the *Diplodocus* to the British Natural History Museum at Kensington. The *Diplodocus* was unprotected by armour and walked on all fours.

Who Built the Pyramids of Mexico ?

About 30 miles from Mexico City, near a village called San Juan Teotihuacan, are two remarkable ancient pyramids, the origin of which is still almost a complete mystery. The larger of the two, which stands over 200 feet high, and measures over 700 feet square at the base, is called the Pyramid of the Sun. About half a

mile away is a much smaller one, called the Pyramid of the Moon. Instead of being pointed at the summit, both these pyramids end in curious oblong terraces, and it is believed that a magnificent temple once stood on the top of the Pyramid of the Sun. Though only about half as high as the Great Pyramid of Egypt, this pyramid is said almost to equal it in volume.

Archaeologists estimate that the Mexican pyramids were built in the sixth century



THE PYRAMID OF THE SUN

B.C., or even earlier, and some say they were the work of the Tlachichiques, a highly cultured ancient people who have left mighty monuments of their civilisation in many parts of Mexico. But who these Tlachichiques were, and whence they came, is a riddle no one has yet succeeded in solving. Mexico is full of mysterious ruins, and near the Pyramid of the Sun thousands of little terracotta heads have been found in what appear to be a graveyard. No two are quite alike; some resemble Egyptian types and some Mongolian. They are supposed to be effigies of dead priests and kings.

Why can we Sleep more Quickly in the Dark Than in the Light ?

Everything in the world lets more or less light through it if it is thin enough. Our eyelids must be thin because we have to hold them up when we see, and if they were thick they would be so heavy that it would be hard work to keep our eyes open. Thus, being so thin, our eyelids are far from being opaque. If they were as opaque as a black curtain we should go to sleep as easily in the light as in the dark, for directly we shut our eyes we should practically be in the dark. But our eyelids let a good deal of light through, as we can tell at once if we turn to the window with our eyes shut.

What is the Kremlin ?

The Kremlin is the central part of Moscow, contains the principal buildings, covers a plateau of 100 acres about 130 feet above the River Moskva, and is enclosed by a high stone wall 2430 yards in circumference with 19 towers. It is a place of great historic interest.

Among the buildings in the Kremlin are the old palace of the Tsars; two cathedrals, one founded in 1326 and rebuilt in 1472; and nine churches built in various periods; the immense Palace of Arms, housing under the Empire the Senate and the Treasury as well as the arsenal; and the celebrated campanile of Ivan Veliki, 271 feet high, with a gilded dome at the top. Close by on the ground is the largest bell in the world, 19 feet high, 65 feet round, and weighing nearly 200 tons. It was broken during a factory fire soon after it was cast, and it has never been hung. In the Kremlin is the seat of the government of the Soviet Union (U.S.S.R.) and of the Russian Republic (R.S.F.S.R.).

Why do They Photograph a Man's Finger-print ?

We often see in the newspapers that the police have taken a photograph of finger-prints left by a burglar on a window-pane or a piece of furniture. The reason for this is that the police hope to catch the burglar by means of these finger-prints. If we look at our hand closely we shall see that the skin is in little ridges, and it is these ridges that have come to the aid of justice. The pattern of the ridges on the tip of our finger never changes while we live, and this pattern is different from the pattern on any other finger in the world. Those who study finger-tips tell us that there are four main types, which they name according to the loops, arches, and other patterns of the ridges, but no two are the same.

We see, therefore, that if we take a print of a man's finger-tip we have a certain means of identifying him, and the police take the finger-prints of all the criminals who fall into their hands, and file them away according to a certain organised system, so that when the impression of a finger-print is found anywhere they can turn up the records and see whose it is.

As far back as 1858 Sir William Herschel, a distinguished Indian Civil servant,

became interested in this idea, and fought hard to introduce the system into a British Court of Justice. But the actual public origin of the method was a letter sent to Nature in 1880 by Dr Henry Faulds, an Englishman, who shares with Sir William Herschel the credit for devising one of the most valuable instruments of justice known to man. Scotland Yard has more than a million finger-prints filed away.

Some day the finger-tip impression of every child will probably be taken at its birth as a means of identification. Mark Twain once wrote a clever novel showing how valuable such a universal system would be in settling cases of disputed identity, but he can hardly have believed that the system would actually one day be seriously proposed. If it is ever done, a country will have an absolute means of identity for every one of its citizens.

Why is a Staff Sometimes Given to an Engine Driver ?

There are many sections of railway where both up and down trains use the same set of rails, and a very simple system of avoiding collisions is adopted without relying on the ordinary signals.

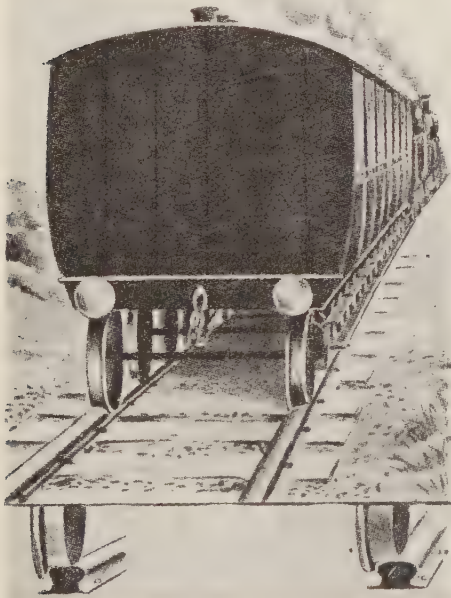
Before an engine-driver may take his train along a single line he must have in his possession a visible sign of his authority to enter that section of line, and so a staff with a loop at the end is handed to him. When he reaches the other end of the single line the staff is given up and passed on to another driver, who is waiting to take another train back over the same line. Until this staff is actually in the possession of the driver he must not enter the single line section.

It sometimes happens that two or more trains are to proceed in the same direction before another train comes the opposite way. In this case the staff is shown to the driver of the first train and a ticket or disc is handed to him before he enters the single line section. This ticket is given up at the other end of the single line, and the official there knows that another train is to follow because the staff has not been produced. When the last train is about to enter the section the staff is given to the driver, and the official at the other end, on receiving the staff from the driver, knows that the line is clear.

Why Does a Train not Run off the Lines when Rounding Curves ?

Newton's first law of motion says that a moving thing tends to go on moving in the same direction, and, indeed, must do so, unless something alters it. It follows from this law that the train going round a curve must run off the lines unless some forces are brought to bear on it that will tend to alter its direction.

As we know, trains can be made to run round curves. We simply have to find out what the arrangements are which interfere with the tendency to move straight. We first think of the flanges on the wheels, but these are of small importance. If there were nothing else, the



These pictures show why a train keeps on the rails. The tyres are slanting, as seen on the right, and not flat, as on the left; this causes the wheels to press outwards and the flanges keep them in position on the rails.

train would ride off the rails in a moment. The next point is the way in which the tyres are cut, as we can see on this page; and, finally, there is a most important arrangement by which the outer rail on a curve is raised. When the railway is made, men have to calculate how sharp the curve is, at what rate trains are permitted to go round it, and then they have to raise the outer rail in proportion. The resistance offered by the outer wheels having to go uphill, so to speak, keeps the train in the path we desire.

Why is a White Man more Civilised Than a Black Man ?

He is not always. There have been black preachers, poets, writers, missionaries, doctors, and mathematicians as civilised as any white man. But the reason why the bulk of white men are more civilised than the bulk of black men is that they inherit a civilisation which is thousands of years old and which their forefathers during all those years have prepared for them; and that, together with this inherited civilisation, they inherit the kind of brain refined by centuries of contact with civilisation which can appreciate it and make use of it. The best brains in every generation pick up the civilisation and add something to it, and this something passes on to the next generation, where the process is repeated with a progressive improvement.

But the black man and the black brain are one or two thousand years behind in this race. They have remained shut off in Africa and other lands, doing and thinking the same thing for scores of generations, and neither refining their civilisation nor improving their brains by selection. As they are now coming into contact with the civilisation of other peoples they are profiting by it in a double way, and the best brains among them will gradually absorb the best of it and pass on to future generations the capacity to absorb more.

Are the Stars Round ?

The reason why stars do not look round is simply that they are so far away. The planets are smaller than the stars, but are so near that when we look at them through a telescope we can easily see that they are round. They have a *disc*, as we call it. But, however powerful the telescope through which we look at the brightest or nearest stars, we never see even the smallest disc, but only a *point* of light. Though the star that shines as a point through the largest telescope may be a million times larger than a little planet like Venus or Mars, which shows a disc through even a small glass, it is so far away that its disc cannot be seen, and it seems probable that no improvement in the telescope, and no increase of its size, will ever enable us to see the disc of a star. But we have no doubt that the stars *are* really round like the Sun.

Why are There so Many Meteors in November?

Meteors are fragments of shattered comets, and the fragments revolve in orbits as the planets do. It happens that in November the Earth, as it revolves in its orbit, crosses the path of a great meteor swarm. Every thirty-three years the Earth during November passed through the centre of the swarm of revolving fragments, and then there were tremendous showers of meteors. In the November of 1833 hundreds of thousands of meteors were seen, and also in the same month in 1866. Since then the expected heavy displays at 33-year intervals have been disappointing and there seems little doubt that the stream has been diverted. It is unlikely that there will ever again be such a fine display as was seen in 1833.

These November meteors are known as the Leonids, because they appear to us to start from the constellation of Leo (the Lion), and they are believed to be fragments of a vanished comet.

What is the Great Pitch Lake of Trinidad?

More than three centuries ago Sir Walter Raleigh found excellent pitch to caulk the seams of his ship in the wonderful Trinidad lake of La Brea, an immense deposit of bitumen in the crater of an old volcano. Today La Brea lake is one of the most wonderful natural sources of wealth in the world, as it is well over a hundred acres in extent and is estimated to contain over nine million tons of bitumen. The most interesting thing about it is that, though borings have shown the pitch to lie 135 feet deep, the supply is believed to be inexhaustible.

Natural gas continues to well up in the centre of the lake, where the pitch can always be seen boiling and bubbling, and fresh deposits are believed to be constantly forming as fast as the old deposits are dug out. A curious feature is that underground forces make masses of pitch rise up like giant mushrooms, between which the rainwater collects in pools, while when the sun is hot even the lightest footfall leaves a clear impression on the surface of the pitch. Trinidad exports vast quantities of the bitumen every year, much of which is used in making roads and aerodrome runways and as insulating material in cables. The value of the export in recent years has

varied between about £800,000 and £180,000. The lake itself is said to be the hottest place in the world. Vehicles may be taken on its surface, and, owing to the plastic nature of the pitch, the impression made by the wheels soon disappears. With this splendid supply of road material to draw on, Trinidad has some of the best roads in the world, the dusty surface being elsewhere a great nuisance in the West Indies.

A very little known fact is that in Venezuela there are similar pitch deposits.

What Holds a Stone Up when we Throw It?

It would be more reasonable to ask: Why does the stone ever return? We shall understand the case by seeing what actually happens when the stone is thrown, and we must be careful to remember Newton's first law of motion, that a moving thing must go on moving in the same straight line at the same speed for ever, *unless something stops it*.

When the stone is thrown, motion, or power, is put into it, and Newton's law, the law that all power has to be accounted for, teaches us not to wonder what keeps the stone up in the air, but to expect that it will go on moving until it leaves the Earth altogether. It is held up by the force we put into it; part of the energy of our arm is behind it.

Two causes, one much more powerful than the other, bring it back. One is the resistance of the air, which the stone pushes against as it rises; the other is the Earth's gravitation, against which the force in the stone has to fight until it is exhausted. Then the stone returns, but the power that was in it has not gone, as we soon discover if it happens to fall on our head.

Who Invented the Kaleidoscope?

The kaleidoscope, which was very popular at the beginning of last century, was perfected in 1816 by Sir David Brewster, though a man named Bradley is said to have invented it about 100 years before. It consists really of a tube in which symmetrical and multi-coloured designs are produced by an arrangement of mirrors, and is familiar chiefly as an optical toy. Designers formerly used Brewster's kaleidoscope for inventing new patterns of carpets and such things.

The Story of the Beautiful Things in the Treasure-House of the World



The Orchard, a piece of beautiful English tapestry designed by William Morris

THE CRAFTSMEN AND THEIR WORK

THE art of making stained glass grew to its perfection in the medieval years of Europe. The earliest kind of coloured windows appeared very different from the large sheets of stained glass that we see here and there today: they looked like windows made of jewels; the glass, of exquisite tints, was used in small fragments of various shapes.

At first the stained glass windows were made by glaziers, and they relied on pieces of coloured glass to make a pattern. After a time the art of the painter was called in to supply the artistic quality that the glazier lacked. Stained windows ceased to be patterns in colour; they became pictures of saints and Bible figures, with all sorts of setting and backgrounds.

Some of the greatest painters of Europe have at one time or another lent their skill to this beautiful craft. Schools and centres of glass painting grew up all over Europe. Very often a whole family concentrated on this work, like the Van Linges of Holland, who worked in the seventeenth century. Sometimes it happened that famous artists designed the window and a glass painter carried out the work. This was the case in France, where men like Jean Cousin, Jean Ingres, Delacroix, and Horace Vernet found time to design coloured glass.

Generally speaking, until comparatively recent times few names of the men who created stained glass windows have been preserved. The best work occurred in the thirteenth to the fifteenth centuries, and is found in the cathedrals and churches of that period.

A great number of coloured windows were made during the Gothic revival in the nineteenth century. In spite of the unnatural stiffness that was produced during that period, some of the stained glass is good—as, for instance, that by John Clayton in Truro Cathedral and King's College Chapel, Cambridge, the work of Charles Winston in Glasgow Cathedral. A. C. Pugin is worthily remembered, and John Powell, who followed in his steps.

When the pre-Raphaelite movement came, Burne-Jones, Ford Madox Brown, and Dante Gabriel Rossetti made some beautiful glass work, which was fine in design and lacked the peculiar stiffness of the imitation Gothic.

Stained glass work, mosaic, and wood-carving are associated in our minds with religious architecture. The best work in all these crafts was done in the Italian Renaissance and the Golden Years of Europe, when men worked simply and slowly and were not trying to be clever.

PICTURES • STATUES • CARVINGS • BUILDINGS • IVORIES • CRAFTS

Mosaic work, the setting together of small cubes of variously coloured marble and glass, is a very ancient craft. The Egyptians, Babylonians, Persians, Greeks, and Romans knew all about it long before the Byzantine builders made the interior of their churches one glowing mass of coloured mosaics. We read of this in our chapters on Byzantine art and architecture.

THE FINE MOSAIC PAVING THE ROMANS LAID IN BRITAIN

Sometimes entire walls were covered with mosaic work. In other cases marble mosaics of varying sizes were used for floors and pavements. In St. Mark's, Venice, is some of the finest mosaic pavement in the world. It was done in the twelfth century.

An Italian artist called Odericus laid the mosaics in the Confessor's Chapel in Westminster Abbey, about 1268. There are remains of Roman mosaic at York, Woodchester, Cirencester. The Romans were the greatest mosaic pavers in history, wedging their minute squares of marble into a cement bed in such a way as to defy the destructive hand of time for many centuries.

In the Confessor's Chapel and on the tomb of Henry the Third in Westminster Abbey is also seen some of the glass mosaic work that was common in Italy during the medieval period. It was used to adorn tombs, pulpits, and bishops' thrones. The most famous masters of this craft were the Cosmati family, in Italy.

Mosaic work is common in Mohammedan architecture. Here and there, as in the Taj Mahal at Agra, are fine specimens of marble mosaic, but for the most part Mohammedan mosaic in buildings set up from the fourteenth to the seventeenth centuries was in wood, with ivory and mother-of-pearl added.

THE ANCIENT ART THAT GOES BACK TO THE CHILDHOOD OF THE WORLD

The use of wood in any way goes back to the childhood of the world. Just as boys whittle a piece of stick today, so did untaught savages carve their mysterious shapes and emblems thousands of years ago. The Maoris brought woodcarving up to a national art. In India and the East native carving in wood and ivory is of a great delicacy and beauty.

When the Gothic genius overswept Europe, woodcarving came, with stained glass window work, iron and metal work,

goldsmith's and silversmith's work, to supplement the bare edifice and make the cathedrals a miracle of the craftsman's labour as well as the builder's skill.

The woodcarving of medieval Europe was extremely beautiful. It exists today in domestic objects like bride chests, benches, door panels, and door heads, apart from monumental things like the great cathedral doors and pulpits, altar pieces, and rood screens.

Among many other lovely treasures in England there is the fourteenth-century woodcarving of Bishop Stapleton's throne in Exeter Cathedral, to show us what kind of work this was. One of the most wonderful altar pieces in the world was carved in wood for Schleswig Cathedral by Hans Brüggemann. It has several panels set with carved figures.

Woodcarving was a beautiful craft in Europe until the nineteenth century, when the introduction of machine-made work killed it for ever, it would seem. After the Gothic years it is marked by certain developments. The fifteenth and sixteenth centuries saw the wealth of carving in private houses, the beautiful "linen fold" and other kinds of panelling; house fronts, nearly all wood, gave excellent opportunity to the craftsmen.

THE MASTER CRAFTSMAN WHOSE WORK DOMINATED ALL EUROPE

In Elizabethan times beds, cabinets, benches, were richly carved; but the most important object in the room was the mantel piece, or shelf, and this was carved very ornately. This work was interesting, but not to be compared with that of the seventeenth and eighteenth centuries, when the school of Grinling Gibbons dominated Europe.

Grinling Gibbons was an Englishman who lived from 1648 to 1721. He was a sculptor and woodcarver, one of the greatest craftsmen in European history. His work is mainly shown in the Renaissance buildings of England—St. Paul's Cathedral, Trinity College Oxford, Trinity College Cambridge, Hampton Court Palace, Chatsworth, and many other places.

Gibbons's work was rich, heavy, and marked by a peculiar minuteness and delicacy of finish. It passed the test of all great carving: the work was suitable to the material and the purpose.

Presently, after the simple benches, settles, stools, and other domestic fittings

THE ART OF THE CRAFTSMEN



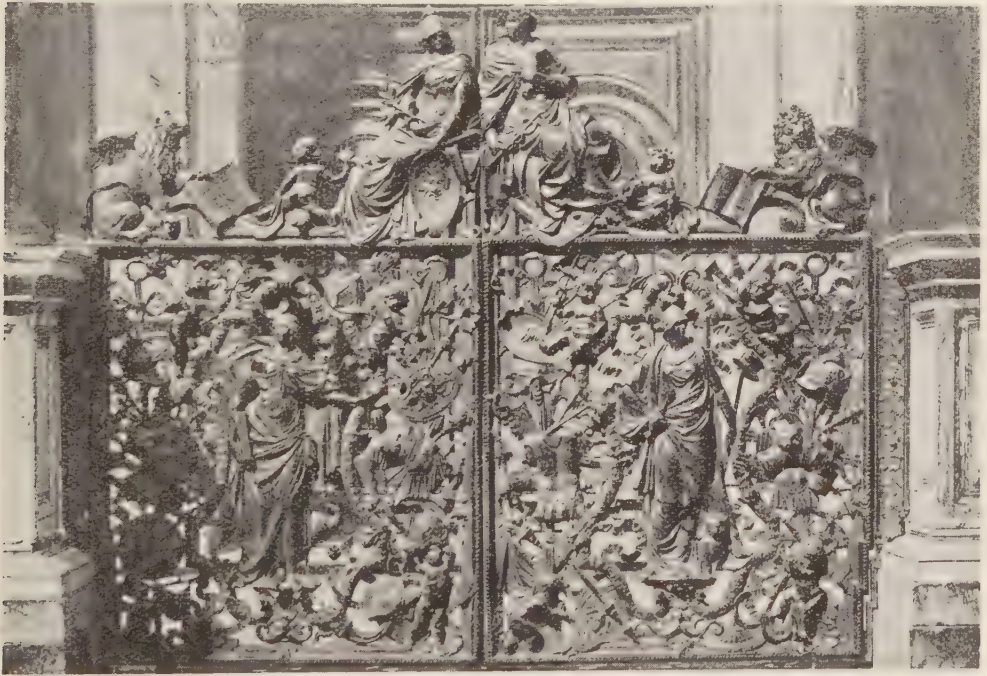
A BOXWOOD MEDALLION WITH
A PORTRAIT OF JOHN OF LEYDEN



GRINLING GIBBONS'S WOODWORK
IN ST. PAUL'S CATHEDRAL



A BOXWOOD MEDALLION OF
THE WIFE OF MAXIMILIAN II



THE EIGHTEENTH-CENTURY BRONZE GATES OF THE CAMPANILE OF ST. MARKS, VENICE



A BRONZE LAMP IN NAPLES



A TWELFTH-CENTURY SILVER PYX



A SHERATON CHAIR



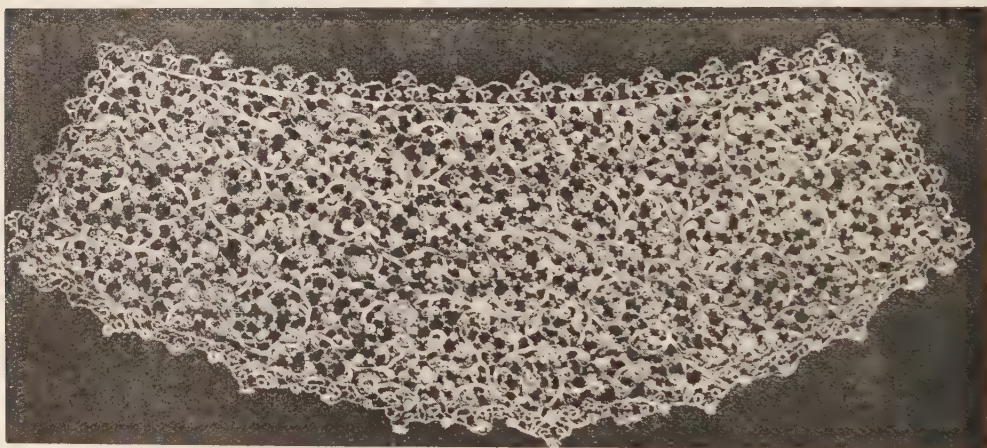
A THIRTEENTH-CENTURY
ENAMEL OF ST. JOHN



AN ITALIAN NECKLACE OF THE
SIXTEENTH CENTURY



A SILVER EWER OF THE
SIXTEENTH CENTURY



A PIECE OF BEAUTIFUL CLUNY LACE



A SECRETAIRE OF THE
EIGHTEENTH CENTURY



A CLOCK IN SÈVRES
PORCELAIN



STAINED GLASS IN THE CHURCH
OF ST. DOMENICO, PERUGIA



A CHIPPENDALE CHAIR
IN MAHOGANY



A HANDSOME FRENCH CABINET
OF THE EIGHTEENTH CENTURY



A HEPPLEWHITE CHAIR
IN WALNUT



A BRONZE PLAQUE OF THE
EIGHTEENTH CENTURY



A SILVER SALVER OF THE
SIXTEENTH CENTURY



A WOODEN CANDLESTICK IN
A CHURCH IN VERONA



PETER VISCHER'S BRÖNZE
STATUE OF KING ARTHUR



A SÈVRES PORCELAIN VASE
IN THE WATTEAU STYLE



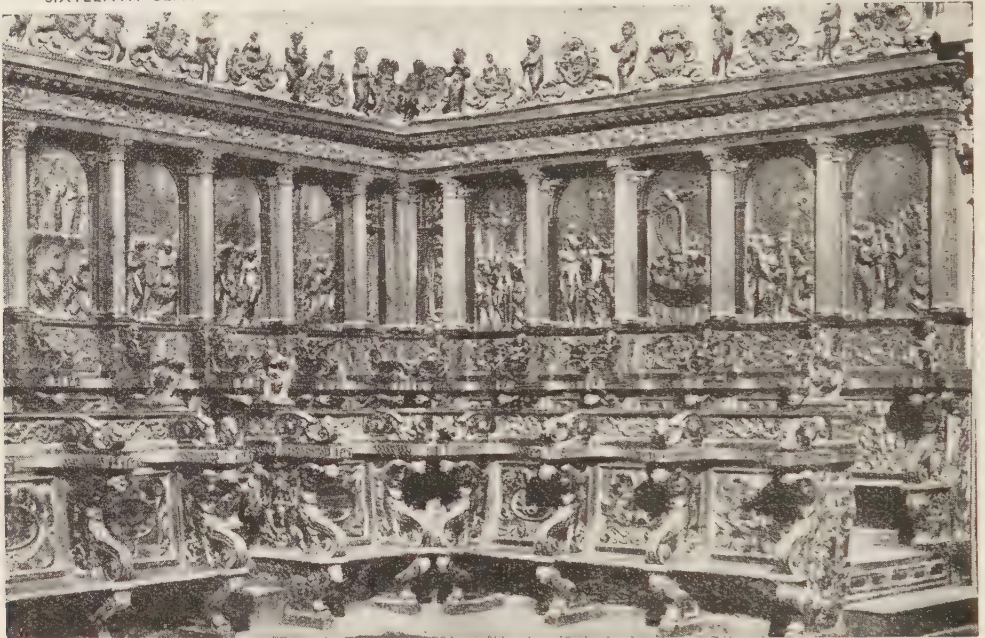
AN ITALIAN PLATE OF THE SIXTEENTH CENTURY



A FINE MOSAIC IN PISA CATHEDRAL DESIGNED BY CIMABUE



A SIXTEENTH-CENTURY MAJOLICA PLATE



MAGNIFICENT CARVED WOODWORK IN THE CHURCH OF SAINT GIUSTINA IN PADUA



A THOUSAND-YEAR-OLD IVORY IN THE NATIONAL MUSEUM, FLORENCE



SHEEP-SHEARING—A GOBELINS TAPESTRY OF THE EIGHTEENTH CENTURY

Pictures reproduced by courtesy of Messrs. Alinari, Anderson, Brogi, Gray, the Victoria and Albert Museum, and others

of early times, furniture as we understand it appeared in Europe, giving opportunity for a great deal of bad work. Craftsmen's fancies ran riot. It seemed not to be necessary to make furniture for strength and durability and suitability to a house; it was made in order to give the cabinet-maker a chance of being clever.

THE LOVELY FURNITURE OF CHIPPENDALE, SHERATON, AND HEPPLEWHITE

Out of the mass of various domestic styles some very fine things appeared; furniture made by men like Thomas Chippendale, Ince and Mayhew, Sheraton, Johnson, and Hepplewhite. This furniture was good in that it was suited to the material and the purpose. Also it revealed an excellent taste, which, so far, we have not been able to improve upon.

With the era of domestic furniture came the days of marquetry and inlay. Things like long-case clocks, chests of drawers, cabinets, were embellished by patterns made of ivory, bone, brass, tortoiseshell, and mother-of-pearl inlaid into the wood. The seventeenth-century Dutch workers were the finest "marqueteurs." A famous French marquetry artist, André Charles Boule, worked for Louis the Fourteenth.

Side by side with the development of domestic furniture came that of the craft of pottery, or ceramics as it is generally called. This craft, like that of wood-carving, is one of the most ancient in the world. Each nation has developed its own pottery, some to a fine art, like the Greeks, Etruscans, Persians, and the Chinese, some keeping a beautiful simplicity, as in the case of the Italian, Breton, and Dutch peasant ware. It is only since the era of cheap machine-made pottery that villages and provinces all over the civilised world have ceased to have their own little potteries.

WHAT CHINA TAUGHT THE WESTERN WORLD IN THE ART OF POTTERY

To the Chinese belongs the honour of being the greatest race of potters ever known. While other countries were content with clay and terracotta vessels of various kinds, some very beautifully shaped and coloured, like the Moorish pottery, the Chinese were slowly perfecting their art. In the fulness of time they developed the kind of ware known as porcelain, and during the fifteenth century this beautiful white and translucent pottery began to find its way to Europe.

It became the foundation of the ceramic art of the Western world.

Florentine potters turned their attention to the Chinese ware and began to imitate it. Hundreds of years passed while first one European country and then another developed artistic porcelain pottery on its own lines. During the course of this long development certain famous centres arose. In Italy there was the famous Majolica ware, a richly-coloured, finely-glazed pottery that got its name from the island of Majorca, a port of call for trading ships. A great deal of beautiful pottery was made in France, some of it distinguished by names of towns, like Nevers and Rouen, and some by names of makers like Bernard Palissy, the famous potter of the sixteenth century. Later there came the St. Cloud porcelain and the famous Sèvres ware. In the eighteenth century Sèvres became the most important porcelain factory in Europe. Some of the greatest artists of the day helped to make the wonderful figures and groups of the famous Sèvres "biscuit" ware.

THE DELFT WARE OF HOLLAND AND THE PORCELAIN POTTERY OF GERMANY

Pottery of a very different kind was evolved at Haarlem in the beginning of the seventeenth century. This is the famous Delft ware—a curiously enamelled earthenware. Germany was the home of stone-ware made at various towns on the Rhine, and presently evolved a fine and beautiful porcelain pottery which is known by the names of the towns where the industry centred, such as Meissen, Vienna, Berlin. Meissen was the most important of these, and branches sprang up in places as distant as St. Petersburg.

In about the middle of the eighteenth century porcelain manufacture started in England. Factories producing dainty and exquisite bowls, figure groups, arose at Chelsea, Bow, Worcester, and Derby. The Chelsea porcelain is the most famous of these wares and is very rare. It was only made for about a generation, and then the factory was moved to Derby, where Josiah Wedgwood had already won renown through his skilful handling of the cream-coloured Staffordshire pottery. In comparatively modern times the Doultons of Lambeth and Villeroy and Boch of Germany revived the old stone ware.

The art of enamelling is in some ways kindred to the art of finely glazed pottery. Here again we are touching on a very old

handiwork of artistic peoples. This baking of a beautifully-coloured and designed glassy substance on a hard material like metal or brick was a favourite device of the races of the old world.

The Egyptians, Assyrians, Greeks and Etruscans, Chinese and Japanese, were great enamellers, and satisfied their love of shining colour in this way, bringing the enamel in conjunction with gold and silver-smith's work wherever possible. The early Celts of the British Islands had this art. Exquisite enamels made in Ireland long ago are in Dublin Museum.

THE BEAUTIFUL FORMS THE ART OF ENAMELLING MAY TAKE

Enamel played a great part in Byzantine art, and naturally had its place in the art of the Romanesque period, the craft thus spreading all over Europe. There were centres of enamelling in many European towns. As the Renaissance years passed, enamel developed into a very fine art indeed. In a way it is still developing.

There are several kinds of enamelling, according to the method in which the enamel is applied to the metal base. Sometimes, as in the *plique à jour* enamel, the base is taken away after the enamel has been fixed, and the result is a kind of beautiful translucent coloured stone. The *cloisonné* enamel was made by soldering little metal strips, the shape of the design, on the metal base, and setting the pulverised enamel in these compartments. Another variety is painted enamel, which involves very intricate and absorbing labour indeed.

The most famous painter of enamels in Europe was Léonard Limosin, which meant Leonard of Limoges, who lived in the sixteenth century. Limoges enamel is famous all the world over. Jean Pénicaud was another great enameller who worked in a different way.

AN ANCIENT GREEK VASE AND ITS TAPESTRY-WEAVING FRAME

From painting pictures on glass or pottery we come to the weaving of pictures—tapestry. Once more we are in the presence of an ancient, beautiful, and homely craft. Tapestry has been used from ancient times for the covering of floors, walls, furniture. Penelope's tapestry-weaving frame is shown on a Greek vase of the fifth century B.C. The Romans too were great makers of tapestry.

Presently, by way of monasteries, where

much weaving was done, the craft spread into Europe and became incorporated with the labours of the guild of weavers. Tapestry weaving is associated with certain towns, and rare names like Jean Duval of Flanders. In the fourteenth and fifteenth centuries Arras was the great place for tapestry; then Brussels, a hundred years later, followed by Middelburg and Delft. Some men from Arras came over to work in England; hence the name *arras* for a woven wall hanging. In the sixteenth century Paris became a centre of the craft, and still is. In the seventeenth century Mortlake was famous for its tapestries.

Artists of great renown have made designs for tapestries—the Van Eycks, Roger van der Weyden, Raphael, Da Vinci, and many others. The princes of Europe who were great patrons of art, like the Medici, the Stuarts, the Hapsburgs, took intense interest in the tapestries they ordered to be made. In the sixteenth century William Sheldon founded tapestry factories in Warwickshire, and they did beautiful work, some of which is still preserved. A little later some good tapestry weaving was done in Ireland.

THE FAMOUS FACTORY FOUNDED BY A KING OF FRANCE

Here again, machine-made goods have done away with the world-value of hand-woven tapestries. William Morris, Burne-Jones, and others made valiant efforts to revive the craft in the late nineteenth century; but tapestry has become a luxury for the few. It is still made at the famous Gobelins and Beauvais manufactories in France. The Gobelins factory was founded by Louis the Fourteenth in 1661, and was under the personal supervision of his art directors.

While this "picture cloth" was being woven in various places in the old Europe, a great deal of attention was being paid to its sister-craft, embroidery. Work of this kind covers a very wide field, for it includes both embroidery for religious purposes, for the robes of great and royal persons, and the decorations of a house.

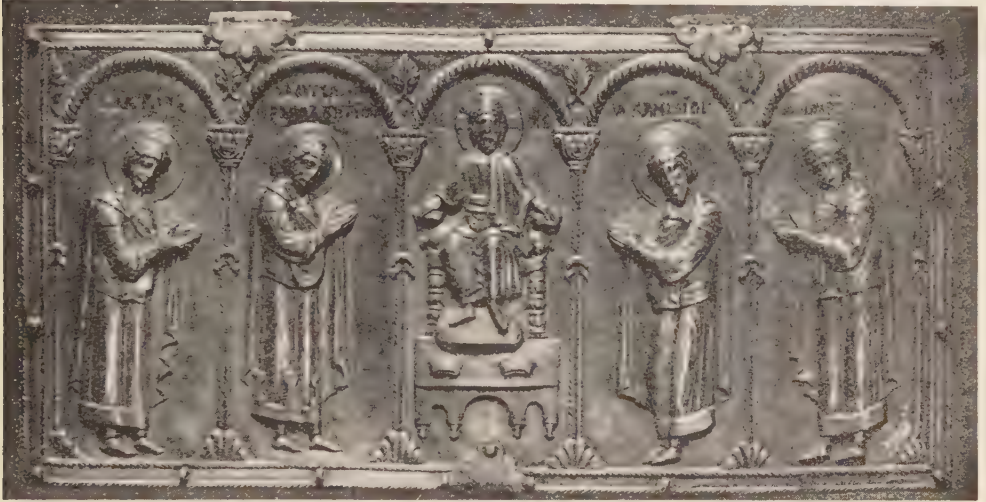
Embroideries were made in great quantities, of a beautiful and exquisite kind, by the princesses, housewives, and nuns of medieval and later Europe. For about a thousand years a great and minute art has been spent on the embroidery for church fittings and vestments. The ladies of Europe, both inside convents and out,

THE CRAFTSMEN AND THEIR WORK

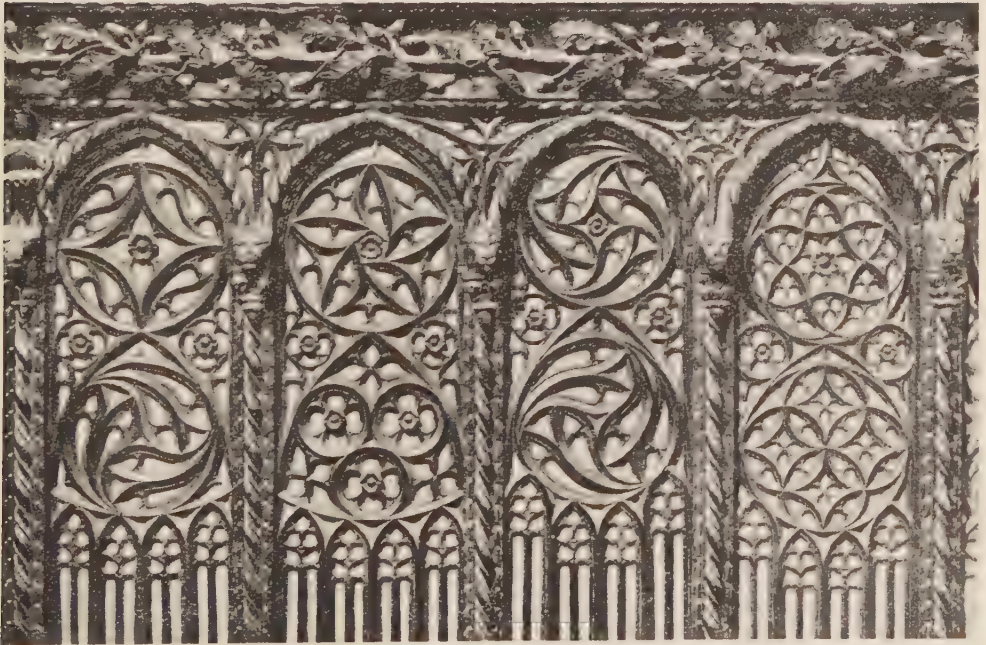
gave their best years to triumphs of needlework for both secular and sacred houses, which are as far from the competence of the young girl of today as one of Raphael's composition would be from the average art student. An infinite patience and an

Mohammedan and Hindoo temples, treasure pieces of needlework; lovely specimens are to be found in most of the museums of Europe.

Probably the most famous piece of embroidery in the world is the so-called



THE FOUR MARTYRS OF TREBIZOND—A RELIQUARY IN ST. MARK'S, VENICE



FIFTEENTH-CENTURY GOTHIC CARVING IN SANTA MARIA GLORIOSA DEI FRARI, VENICE

intense love went to this labour; the kinds of stitches used seem countless.

In China, Japan, India, Egypt, Palestine, and wherever olden civilisations took root, we find beautiful embroideries. Nearly all Christian churches and cathedrals,

Bayeux Tapestry. This is a strip of linen about 230 feet long, and on it is embroidered, in coloured wools, the tale of the Norman Conquest. It is said to have been the work of Queen Matilda and her ladies. It is reproduced on pages 709 to 716.

Lace work is equally diversified and historic, and often makes part of an embroidery. Here again is an amazing variety of stitches and styles, from the various points and crochets to the old pillow-lace of Flanders.

THE BEAUTIFUL THINGS MADE FROM GOLD AND SILVER IN BIBLE DAYS

Side by side with these various minor crafts, whose object was to supplement the larger arts, the work of the silversmith, goldsmith, and iron-worker was being not so much developed as continued. We are accustomed to thinking of gold and silver merely in connection with jewellery. We forget these metals were used in enormous quantities by the ancients. The Eastern nations, long before the dawn of Christianity, had brought the art of gold and silver work up to a very high pitch. We remember the silver and gold cups of Bible story, and here is a description of a palace in ancient Greece that makes us feel we live in days of mean achievements:

There was a gleam as it were of sun or moon through the high-roofed hall of great-hearted Alcinous. Brazen were the walls . . . and round them was a frieze of blue, and golden were the doors that closed in the good house. Silver were the door posts that were set on the brazen threshold, and silver the lintel thereupon, and the hook of the door was of gold. And on either side stood golden hounds and silver . . . to guard the palace of the great-hearted Alcinous, being free from death and age all their days . . . Yea, and there were youths fashioned in gold, standing on firm-set bases, with flaming torches in their hands, giving light through the night.

So wrote Homer of a Greece that was already old. In the days of the rich art of Europe, this craft work was carried on by gifted men.

THE ADVENTUROUS LIFE OF ONE OF ITALY'S MASTER CRAFTSMEN

In sixteenth-century Italy there was among many others, Benvenuto Cellini, who worked in gold and bronze. This man is one of the most interesting characters in the history of art. He lived from 1500 to 1571, was sculptor, goldsmith, engraver, and the author of an autobiography which tells us a great deal about his times apart from its bearing on his own riotous life. He swung a sword as readily as he wielded his tools, could never hear of a quarrel, big or small, without flinging himself into it. Exile and imprisonment were more than once his lot. He seemed to bear

a charmed life, and in the intervals of his escapades produced some of the finest craft work of Italy. His best known statue is the Victorious Perseus. A great many lovely little boxes, coffers, cups, plates, were chased and embossed by Italian artists like Cellini. They can be seen in all museums, and were so much a matter of ordinary work that very often the maker's name or sign is not engraved on the work. One such example is a most beautiful thirteenth-century golden cup which has underneath, "Nicholas of Hereford made me."

In Germany, in the sixteenth century, there was a fine school of bronze workers headed by Peter Vischer. His tomb of St. Sebald, in the church of St. Sebald, Nuremberg, is an exquisite piece of metal work. Vischer also made the fine King Arthur statue which stands among the twenty-four bronze figures that guard the tomb of the Emperor Maximilian I, in the Hofkirche at Innsbruck in Austria.

THE UNKNOWN WORKERS IN METAL WHO ENRICHED THE GOTHIC CATHEDRALS

In France there were numbers of "imagiers" in gold, silver, and bronze, whose names have been forgotten. They helped to make the Gothic cathedrals unforgettably beautiful. Notable among them was Biscornette, who wrought the iron doors of Notre Dame. In the seventeenth century a famous craftsman, called Caffieri, an Italian, was working in France for the "Sun King." He superintended the metal work that was carried out at the Gobelins factory.

A great deal of labour in bronze and metalwork is taken for granted. It is only when we see fine gates and grilles, whose lines are strong and beautiful, that we realise how much poorer the world would be without this very old craft. We think of beaten work, like the great gates of Shalmaneser, in the Assyrian Hall of the British Museum; the Eleanor Grille and Henry the Seventh's bronze screen in Westminster Abbey; the gates of Hampton Court Palace; and then we wonder at their complete and satisfying union of beauty and strength.

All the examples of craftsmanship of which we have written in these pages have come to us from the past. This century, too, has its master craftsmen whose work will live and be admired by future generations.

The Story of the Peoples of All Nations and Their Homelands



The ship of the desert in the great Sahara

THE AFRICAN CONTINENT

AFRICA is an exciting continent. It was said of old: *Ex Africa semper aliquid novi* (From Africa there is always something new). The same has remained true all through the centuries, partly because there is much to learn about Africa, and partly because we have been so slow in learning it.

Until the Suez Canal was opened in 1869, Africa was linked with Asia by land, and traders passed backwards and forwards across the isthmus. The Bible story of Joseph and his brethren shows that this traffic was going on between 3000 and 4000 years ago, and even then Egypt was a land of ancient renown. In later days, on the African coast south of Italy, the rise of Carthage under the Phoenicians, and Hannibal's early successes against the Romans, brought further renown to North Africa. In the end, Carthage was destroyed and the Roman power spread along both sides of the Mediterranean.

Many and famous as were these happenings, they did little to make Africa known as a whole. Except along the Nile, the habitable lands of North Africa are only a narrow strip. Beyond them lies the great desert barrier of the Sahara. Rumours reached the north about the wonders that lay beyond the desert. There

is a story that 600 years before Christ a Phoenician ship sailed from the Red Sea round the coast of Africa to the Mediterranean. It is less in doubt that a Carthaginian admiral named Hanno, in charge of a colonising expedition about 500 B.C., sailed along the West African coast as far as the Gulf of Guinea. Another story tells of some youths who journeyed to a far country inland and were captured by pygmies.

It is difficult to tell truth from fiction in these stories. What is certain is that knowledge of Africa south of the Sahara remained vague during the decline and fall of the Roman Empire; also during the later centuries when Arab rule spread through North Africa and the Moors overran Spain, right up to the time when Spain and Portugal rose to power in the Middle Ages. Then, under the influence of Prince Henry the Navigator, hardy Portuguese sailors made their way farther and farther along the west coast of Africa till at last Vasco da Gama, on his great voyage in 1498, sailed beyond the Cape of Good Hope, round the south coast of Africa and up the east coast, and finally crossed the Indian ocean to India.

The Portuguese soon made settlements in both West and East Africa. At a later

THE FIVE CONTINENTS & 100 NATIONS & RACES THAT INHABIT THEM

date, English and Dutch and other European trading stations were set up in West Africa, and the terrible slave trade began. South Africa too began to be opened up. But still knowledge was mostly confined to the coastal lands; and it needed the explorations of James Bruce in Abyssinia and Mungo Park along the Niger in the 18th century, followed by the great journeys of Livingstone and other explorers of many nationalities in the 19th century, to fill in the map of the interior.

THE VAST CONTINENT THREE TIMES THE SIZE OF EUROPE

As we know it today, Africa has an area of 11,500,000 square miles; only Asia is larger among the continents, and it is over three times the size of Europe. From north to south it extends over a distance of 5000 miles, and its greatest width from east to west is nearly the same. For the most part it has a narrow coastal plain, from which the land rises more or less steeply towards the interior, either as a mountain range or a giant staircase leading up to wide plateaus. In the heart of the continent the level may drop again, forming enclosed basins like those of Lake Chad, south of the Sahara, and Lake Ngami, north of the Kalahari; or nearly enclosed basins like that of the Congo, which was once an inland sea. In eastern Africa the plateau is cleft by the Great Rift Valley, the result of some old convulsion of nature, extending from the Zambesi as far north as Palestine. Scattered along the Rift Valley and on the neighbouring plateau are many lakes, comparable with the North American Great Lakes; the largest, Lake Victoria, is second only to Lake Superior; they are the largest two lakes in the world, unless the Caspian Sea be counted as a lake.

AFRICA'S LOFTY VOLCANOES AND MANY GREAT MOUNTAIN RANGES

Lofty volcanoes, mostly extinct, but some still active, tower above the general level in various parts of Africa. The highest are in East Africa—Kilimanjaro (19,000 feet), on the Kenya border of Tanganyika Territory; Mount Kenya (17,000 feet), in the heart of Kenya Colony; and Ruwenzori (16,800 feet), the once fabled "Mountains of the Moon," on the borders of Uganda and the Belgian Congo. On the west coast the Cameroon Mountain rises to 13,500 feet. Apart from these and other volcanic peaks, Africa has many

mountain ranges, including the Great Atlas (14,800 feet) in Morocco, and the Drakensberg (Dragon Mountains, 12,000 feet), known as the "Switzerland" of South Africa.

Most of the rivers of Africa are broken by rapids and falls where they descend the giant "staircase" round the coast or force their way through the mountains. Many of them are comparatively short, but some rise beyond the coastal ranges and either lose themselves in the interior, like the Shari River, which flows into Lake Chad, or follow long roundabout courses before they break through to the sea.

The "Big Four" among the rivers of Africa are the Nile (nearly 4000 miles), one of the longest rivers in the world, draining north-east Africa from the Great Lakes to Egypt and the Mediterranean; the Congo (2900 miles), draining western equatorial Africa and flowing into the Atlantic Ocean; the Niger (2600 miles), the great river of West Africa, draining into the Gulf of Guinea; and the Zambesi (1600 miles), rising near the Congo but flowing south and east instead of north and west, and finally discharging into the Indian Ocean.

NATURAL BARRIERS TO NAVIGATION ON AFRICA'S FOUR GREAT RIVERS

The Congo becomes unnavigable within a hundred miles of the open sea. The three other rivers can be ascended for longer distances, but sandbanks and shifting channels make them difficult of navigation by large vessels, and all are broken by rapids and falls in their upper reaches. Most famous of these barriers are the Victoria Falls of the Zambesi, on the borders of Southern and Northern Rhodesia, where the course of the river is crossed by a chasm about 100 yards wide, and the whole volume of the Zambesi—which is here a mile wide—plunges down a sheer cliff 400 feet deep.

Africa has been described as the "Continent of Contrasts." Most of North Africa is a great desert, the Sahara, in parts of which travellers may scorch by day and freeze at night. The name comes from the Arabic *Sahra*, an uninhabitable wilderness, and it has been calculated that this desert covers nearly 3,000,000 square miles, or a quarter of the continent. In Equatorial Africa are vast areas clothed with dense jungle, and off the West Coast are islands which are a picture of luxuriant

THE AFRICAN CONTINENT

beauty, with tropical flowers, plants, and trees flourishing in a climate of perpetual steamy heat. Almost on the Equator are mountains crowned with snow and glaciers, while at intermediate levels, from 5000 feet to 8000 feet, are wide stretches of open woodlands and grassy plains where white people can settle with their families in permanent homes.

The animal life presents almost as many contrasts as the Zoo. Quadrupeds include dainty little gazelles, the ugly, clumsy-looking hippopotamus and rhinoceros, the lofty giraffe and mammoth elephant, the haughty camel and lordly lion—but not the tiger. There are hosts of chattering

missionaries and government officials, and rivalries grew up among the different nationalities. War in Europe meant war in Africa between the white men and their native allies, and outposts of empire often changed hands. In the second half of last century, when Livingstone and Stanley and other great explorers had thrown light on the "Dark Continent," the rivalry between the European powers to stake out their claims led to what was known as the "Scramble for Africa." Happily, agreement was reached without resort to war, though there were often little wars between the white man and the Africans, not always because of European



A NATIVE MARKET-PLACE IN PARATAU, DAHOMEY

little monkeys, big baboons, and fierce gorillas as big as men. The people also differ greatly: the light-coloured, regular-featured, historic peoples of North Africa—Egyptians, Arabs, Berbers, Moors; the Negro people of tropical Africa—black, with flat noses, thick lips, woolly hair. There are giants and there are pygmies; and, in South Africa, yellowish-brown Hottentots and Bushmen, who make curious clicking sounds when they speak.

As time went on, the white men who had formed settlements along the shores of tropical and South Africa gradually extended their influence over the scattered tribes inland. There were traders and

aggression, but because of the savagery of the tribes. And here it may be said that while in the past the African peoples have suffered much at the hands of the white man, particularly in the days of the slave trade, they have also gained much and have been helped to "grow up" in many ways. Today, it is the declared aim of all the Colonial Powers not to take advantage of the African and make all they can out of his country, but to work in partnership with him, guiding him along the road of true civilisation.

Africa has made wonderful strides in the past hundred years, and it should have a still greater future if wisely

developed. But the drawbacks should not be forgotten. The Sahara is not the only desert tract; other regions lack water, and West Africa has large areas of laterite, a reddish-clay baked by the sun into very hard masses. Also, the African is often very unwise as a farmer. He gets all he can out of his land, and when it is exhausted he makes another clearing in the forest. Unprotected and uncultivated, the soil of the old clearing is washed away by the tropical downpours, and the result is "eroded" country, barren and desolate. So widespread are these conditions, that soil erosion has become one of the main problems of agricultural development facing the African powers.

Before the First World War there were seven Powers in control of African territory: Britain, France, Germany, Portugal, Belgium, Italy, and Spain. After that war, Germany's possessions were divided among the neighbouring territories, under mandates from the League of Nations. In the Second World War, the Italian territories were occupied by the Allies and put at the disposal of the United Nations. The parts of the British Empire which fall within Africa are described elsewhere in these pages, and so is Egypt. Here we will glance at the rest of the continent, in its political divisions.

FRENCH AFRICA

FRANCE has the biggest share of Africa—4,250,000 square miles. This is half-a-million square miles larger than the British Commonwealth and Empire in Africa, and more than a third of the whole continent. But the value of this vast territory is lessened by the fact that a large part of it consists of the Sahara. All but a small fraction forms a continuous block of territory, filling most of the broad north-west shoulder of Africa. This block falls into three divisions: French North Africa, French West Africa, and French Equatorial Africa.

French North Africa

FRENCH NORTH AFRICA lies at the north-west corner of the continent, with coasts on both the Mediterranean and the Atlantic. It is made up of Algeria, which is a French possession fronting the Mediterranean, and two protectorates—Tunisia on the east,

Morocco on the west. Behind the coast, the Atlas Mountains run roughly east and west through all three countries. These mountains are not a single range, but a series of mountain chains, with fertile valleys whose crops and flocks and herds are a main asset of French North Africa. Between the chains are plateaus some 3500–4000 feet above sea level, where it can be very cold in winter (North Africa is outside the tropics). Much of this upland country has poor soil, and scattered through it are great salt marshes. South of the Atlas Mountains the three territories merge into the Sahara.

In the fertile valleys of the north, cereals are widely grown, and fruits and vegetables, especially grapes for wine (chiefly in Algeria), and olives for olive oil (chiefly in Tunisia). Sheep number nearly 20,000,000, half of them in Morocco. There is also considerable mineral production, chiefly phosphates and iron ore. In 1947, exports (mostly from Algeria) were valued at £125,000,000. Nearly 5000 miles of railway link up the principal towns in the north and, in Algeria, reach out into the desert on the side of both Morocco and Tunisia.

ALGERIA is the largest of the three territories and has been longest under French control. It was conquered in 1830, and more lately has been extended far into the Sahara, till now its area is 850,000 square miles—about four times the size of France. It supports about 7,500,000 people, mostly in the northern valleys and along the coast. Algiers, the capital and chief port, has a quarter of a million inhabitants. It was infamous in earlier days under the "Deys" of Algiers as a nest of pirates. Other large towns are Oran (200,000) and Constantine (100,000).

TUNISIA, whose "Bey" placed his country under French protection in 1881, is about the size of England, with a population of some 2,750,000. It takes its name from its capital, Tunis, a city of nearly a quarter of a million. Not far from it are the ruins of Carthage, the rival of ancient Rome.

FRENCH MOROCCO covers about 150,000 square miles, with a population of about 8,000,000. The Sultan accepted a

THE NATIVE PEOPLES OF AFRICA



FOUR SAKALAVA GIRLS OF MADAGASCAR



A JEWISH SINGING-GIRL OF ALGERIA



A GIRL OF TUNISIA PREPARING COUSCOUS,
A PREPARATION OF RICE



A LADY
OF MOROCCO



A MOSLEM BOYS' SCHOOL AT BISKRA, IN ALGERIA



A LADY
OF MOROCCO



A YOUNG URCHIN
OF BISKRA



DAUGHTER OF A WEALTHY
BEDOUIN OF TUNISIA



ARAB MERCHANTS TAKING COFFEE AT A MOORISH CAFÉ



ARAB GIRLS OF BISKRA



ARAB OF ALGERIA



YOUNG MUSICIANS OF BISKRA



A NATIVE OF ANGOLA, OR
PORTUGUESE WEST AFRICA



A BEAUTIFUL LITTLE GIRL
OF TUNISIA



A NEGRO BOY
OF FRENCH SUDAN



AN OLD ARAB VEGETABLE SELLER IN TUNIS



BEDOUIN BEGGARS OF TUNIS



A GIRL OF ALGERIA



GIRLS OF TUNIS



A WOMAN OF FRENCH GUINEA
AND HER BABY



A MOTHER AND CHILD
OF MADAGASCAR



A MOTHER AND CHILD
OF DAKAR, IN SENEGAL



WOMEN OF MADAGASCAR MAKING MATS



AN ARAB WOMAN OF
ALGERIA AND HER CHILD



A HAPPY HOME
IN MOROCCO



A YOUNG FAMILY
OF TRIPOLITANIA

French protectorate in 1912. Also included in Morocco are two Spanish Zones, and an International Zone around Tangier, at the entrance to the Straits of Gibraltar. But the great bulk of the country comes under France, which has made the port of Rabat (160,000) the official capital. Other towns have grown remarkably. The commercial capital is the port of Casablanca (560,000). Inland are Fez (201,000) and Marrakesh (238,000), the old Moorish capitals, and Meknes (159,000).

French West Africa

FRENCH WEST AFRICA is the largest administrative unit in the continent. It covers 1,800,000 square miles—half the size of Europe—and has a population of 16 millions. It is a link-up of eight colonies, with a Governor-General over all. The colonies fall into two groups—five of them scattered along the coast, to which they reach out from the interior like the fingers and thumb of a giant hand, separated by British and other non-French territories; and three inland colonies, linking the others together and stretching back to French North Africa. All but two more or less desert territories have been opened up by railways. A recent year's exports were valued at £26,500,000, chiefly ground-nuts and ground-nut oil, which accounted for between a third and half of the total, coffee, bananas, cocoa, palm kernels and palm oil, and oil-cake.

Senegal, the senior colony, lies in the extreme west of Africa, and is nearly as large as England and Scotland together. It takes its name from the Senegal River, 1000 miles long, which in its lower course is the colony's northern boundary. St. Louis, the capital, (population 45,000), at the mouth of the Senegal, is much inferior as a port and commercial centre to Dakar (100,000), which has one of the best harbours in West Africa and is the seat of the Governor-General. Ground-nuts are the chief commercial product.

Going south and east we come to French Guinea, which is rather larger than Britain. It not only grows many crops, but has a flourishing livestock industry in the Futa Jallon highlands, where the Senegal, the Gambia, and the Niger rivers all take their rise. Round the bend of the coast is the Ivory Coast,

half as large again as Britain; it supplies most of the coffee and cocoa exported from French West Africa. Dahomey, still farther east, is especially noted for its oil palms, estimated to number 30 million.

Mauritania, French West Africa's fifth colony with a seaboard, lies to the north of Senegal and merges into the Sahara. On an area of 444,000 square miles it has a population of little more than one per square mile—mostly nomad tribes with their flocks and herds. It is administered from St. Louis.

Of the three inland territories, the French Sudan and the Niger Colony are each as large as Mauritania, and though not so thinly populated, they too merge into the Sahara. The French Sudan includes the Upper Senegal and Niger basins, with that famous old city, Timbuctoo. As a contrast, the last of the territories of French West Africa, the Upper Volta, is the best populated of all—27 to the square mile. Nearly twice as large as England and Wales, it lies north of the Gold Coast and is watered by the headstreams of the Volta.

France is the United Nations Trustee for the greater part of Germany's former West African possessions, namely, Eastern Togoland, adjoining Dahomey, and all the Cameroons except a narrow strip attached to Nigeria. French Togoland (22,000 square miles) is three times the size of Wales, with three-quarters of a million inhabitants. Exports are chiefly coffee, cocoa, palm kernels, and ground-nuts. The French Cameroons, extending from the angle of the Gulf of Guinea to Lake Chad, covers 167,000 square miles and has a population of 2,750,000. Much of it is dense primeval forest. Exports are chiefly cocoa, bananas, palm kernels, palm oil, and coffee. The name comes from the Portuguese Camaraos, meaning shrimps or prawns; these were found in vast numbers by early navigators on the shores of the deep estuary now known as the Cameroons River.

French Equatorial Africa

FRENCH EQUATORIAL AFRICA, which is crossed by the Equator, combines four colonies under a Governor-General. There are two coastal territories, the Gabun and Middle Congo, together larger than France, and two inland territories, Ubangi-Shari, itself larger than France,

and Chad, more than twice the size of France. Though so different in size, they are alike in being thinly populated, each averaging between four and five persons to the square mile. The total area is nearly a million square miles and the total population over four millions.

The Gabun, like the Cameroons, takes its name from a so-called "river" which is really the estuary of several rivers. It is covered with tropical forest and is especially noted for a rose-tinted, scented timber, Okoumé, used for plywood. Libreville, the capital, owes its name to its having been founded as a home for freed slaves in 1849.

The Middle Congo is the only one of the four territories with a railway. The line runs from north of the mouth of the Congo, around the Congo rapids, to Brazzaville, on Stanley Pool. Brazzaville is the capital of French Equatorial Africa, and facing it across the Pool is Leopoldville, capital of the Belgian Congo. Beyond Stanley Pool the Middle Congo boundary follows the right bank of the Congo river up to the in-flow of its great right-bank tributary, the Ubangi, and then follows the right bank of that river to the boundary of the Ubangi-Shari territory. This takes its name from the rivers Ubangi and Shari, the latter flowing north to Lake Chad. Cotton and coffee are largely cultivated.

The Chad territory includes the lower Shari basin, where cotton and ground-nuts are widely grown. North of Lake Chad it extends into the Sahara to the Libyan frontier, rising in the Tibesti Highlands to 13,000 feet. There is a big pastoral industry.

Other French Territory

IN East Africa is French Somaliland (9000 square miles; population 40,000). Its position at the southern end of the Red Sea is important, and commercially it is the Gateway to Abyssinia, with which it is connected by rail from Jibuti, the capital and chief port.

Out in the Indian Ocean, 250 miles from Portuguese East Africa, is the large island of Madagascar (228,000 square miles), a French protectorate larger than France itself, with a population of over four millions. From north to south it measures a thousand miles, and along the West coast are wide plains leading up to a coastal plateau, which drops abruptly

on the east to a coast lined with lagoons. Peaks of over 9000 feet rise from the plateau, on a ridge of which, over 4000 feet above the sea, is built the capital, Tananarive (population 120,000). A railway 229 miles long links it with the chief port, Tamatave, on the east coast, and other lines bring the railway mileage to 534. Rice (for local consumption), coffee, vanilla, sugar, and other export crops are grown, but the chief industry is cattle-raising; there are 6,000,000 head of cattle, and the chief export is frozen and preserved meat. In 1947 the total exports were valued at £14,500,000.

Between the northern end of Madagascar and the mainland are the volcanic Comoro islands, a dependency of Madagascar, nearly as large as the Orkneys and Shetlands. They produce vanilla, sugar, cocoa, and essential oils for perfumery. Eastward from Madagascar is the French colony of Réunion, a volcanic island of 970 square miles, rising to over 10,000 feet, mainly dependent on sugar.

BELGIAN AFRICA

KING LEOPOLD II of Belgium took a great personal interest in H.M. Stanley's exploration of the Congo and in an Association formed to take over the government of the Congo Basin. The Berlin Conference of the Powers in 1885 recognised King Leopold as the personal sovereign of the Congo Free State, which was to be governed on ideal lines. In practice, the Free State excited a lot of criticism, and on the king's death in 1909 it was taken over by Belgium. Many reforms were introduced, and the Belgian Congo, as the country is now called, has made steady progress.

It is a big country—900,000 square miles—forming a rough quadrilateral in the heart of Africa, with no outlet to the sea except at the mouth of the Congo. It is well watered by the Congo, which flows through the country in a great arc (going north, then east, then south), and by the many other rivers of the Congo basin; the main tributaries are the Kasai (left bank) and the Ubangi (right bank). The Equator runs through the northern half of the country, which is covered with primeval forest, thinning out to open woodlands as the country rises southward and eastward. There is mountainous country on the eastern border, in the region

TWO TRADING CITIES OF AFRICA



MUD HUTS IN THE TRADING CENTRE OF SOKOTA, CAPITAL OF A PROVINCE OF NORTHERN ABYSSINIA



TIMBUCTOO IN THE FRENCH SUDAN, ON THE CARAVAN ROUTES BETWEEN WEST AFRICA AND TRIPOLI

of the Great Lakes, reaching nearly 17,000 feet in the peaks of Ruwenzori, the old Mountains of the Moon. There are mountains, too, on the western side, and where the Congo breaks through these its course is obstructed by rapids for over 200 miles between Leopoldville, the capital, and the port of Matadi.

Such interruptions are not uncommon on the Congo and its tributaries; but they are navigable for long stretches—in the case of the Congo for over 1000 miles above Stanley Pool, before Stanleyville and Stanley Falls bring more obstructions. River steamers ply on these navigable stretches for a total distance of over 7000 miles, and, on the main river, railways run round the rapids. From Matadi to Leopoldville there is also a pipeline, up which oil is pumped for the use of the river steamers.

The principal railways are in the far south, where the "Copper Belt" of Northern Rhodesia is continued in the copper fields of Katanga. The mineral wealth of this region has been a magnet for communications with the outside world. The Rhodesian railways have been extended through Elizabethville, the chief town of Katanga, to Bukama, on the Lualaba (Upper Congo), and thence north-east to Port Francqui, at the head of navigation on the Kasai, 3288 miles from Cape Town. From Tenke, 176 miles beyond Elizabethville, a line branches off to the west and runs for 1158 miles through the Belgian Congo and Portuguese West Africa to Lobito Bay, on the Atlantic. This is the shortest route to Katanga, and as Katanga is connected by the Rhodesian railways with the port of Beira, in Portuguese East Africa, it is possible to cross the continent by rail.

In a recent year the value of the exports from the Belgian Congo was £43,500,000, more than half of which was provided by copper (over £11,000,000) and gold, tin, other minerals, and precious stones (£12,750,000). Palm kernels and palm oil, cotton and coffee are other valuable exports. The oil palm grows wild and is also cultivated in large plantations by European companies. About a million acres are under cotton. Livestock thrive in the Trustee Territory of Ruanda-Urundi, north of Lake Tanganyika, formerly part of German East Africa and now attached to the Belgian Congo.

PORTUGUESE AFRICA

SOME 350 miles west of Morocco is the Portuguese island of Madeira. It is nearly twice the size of the Isle of Wight, with grand mountainous scenery, rising to 6000 feet in extinct volcanic peaks. Vegetation is luxuriant, the climate mild and sunny. Funchal, the capital, is a favourite health resort, and Madeira wine is famous.

Farther south, 300 to 400 miles west of the great bulging shoulder of West Africa, are the volcanic Cape Verde Islands (1000 square miles). Dry, dust-laden winds from the Sahara limit cultivation, and every year the young men go to South America for harvest work. A fuelling station on St. Vincent is much used by ships trading with South America.

On the mainland, between Senegal and French Guinea, is Portuguese Guinea (14,000 square miles; 350,000 people). This is as far north as the oil palm flourishes in West Africa. The country is little developed, but usually over 12,000 tons of palm kernels and 1000 tons of palm oil are exported, and 30,000 tons of unshelled groundnuts.

São Thomé (St. Thomas) and Príncipe (Prince's) are volcanic islands in the bend of the Gulf of Guinea. São Thomé, half as large again as the Isle of Man, rises to 7000 feet; Príncipe, as large as Jersey, to 3000 feet. So lovely are they that the Portuguese call them "The Pearls of the Ocean." With slave labour they produced large crops, first of coffee, later of cocoa. Output has since dwindled.

ANGOLA, as the Portuguese call their main West African possession, has an area of nearly half-a-million square miles and a population of about four millions. The coast stretches from the mouth of the Congo southward for over 1000 miles to the borders of South-West Africa. Much of it is arid. Scanty rainfall in the north serves the needs of park-like country, and richer vegetation clusters round the river mouths; but the south is practically rainless. There are some historic towns with grim memories of slave-trading days. Chief of these is the capital, Loanda (St. Paul de Loanda), a town of about 70,000 people, with a deep-water harbour protected by an outlying island. Benguela and Mossamedes have some fine old

buildings, but have lost much of their importance; their ports are merely open roadsteads.

From these towns, and from little Porto Amboina, railways climb inland to high plateau country. The rainfall is heavier where the westerly winds strike the steep escarpments and mountains behind the coast, and settlers on the plateau are able to carry on mixed farming. In the far interior, on the borders of the Belgian Congo and Northern Rhodesia, the country drops again to the valleys of the Kasai and the Zambesi.

The chief railway, the Benguela Railway, starts from the modern town and port of Lobito Bay, runs along the coast for 22 miles to Benguela, then turns inland, crosses Angola, and continues to the Katanga copper fields as described in the section on the Belgian Congo. British enterprise had a lot to do with the building of this railway, and one of the towns on the plateau is named Robert Williams after Sir Robert Williams, who played a leading part in the arrangements. A few miles farther on is Nova Lisboa (New Lisbon), an important business centre, including the railway repair shops. It has been earmarked as the future capital of Angola, but the transfer from Loanda has still to be made.

In 1947 Angola's exports were valued at nearly £10,000,000, provided chiefly by coffee (over £2,500,000), diamonds, palm oil and palm kernels, cotton, sisal, maize, sugar, and dried and salted fish.

MOZAMBIQUE, or Portuguese East Africa, is smaller than Angola but has more people—over five million on 300,000 square miles: 17 to the square mile. It is very irregular in shape. With a coastline of 1400 miles, it extends inland for 50 miles in the south, 400 miles in the north, and 700 miles in the centre, along the Zambesi river. For the most part the territory does not rise above the coastal lowlands—1500 feet. It takes in a strip of plateau country both south and north of the Zambesi, especially in the north, where Mozambique stretches back to Lake Nyasa. Here and there are mountains going up to 6000 feet, and even 8000 feet. But in general, Portuguese East Africa may be described as the first step of the staircase leading up to the high plateaus of South Central Africa. As

such, it is very much interested in the traffic up and down—to and from the Transvaal in the south, Southern and Northern Rhodesia in the centre, and Nyasaland in the north.

The Gateway to the Transvaal is Lourenço Marques, the capital of Mozambique, a town of 70,000 people on Delagoa Bay, founded over 400 years ago, but unhealthy and making little progress till growing trade and sanitary reforms turned it into a busy port and pleasure resort, following the construction of a railway to the Transvaal. Under the Mozambique Convention between Portugal and the Union of South Africa, Lourenço Marques is guaranteed a proportion of the Transvaal's trade, and the Transvaal is guaranteed labour for the Rand mines.

Beira, farther north, is the Gateway to both Southern Rhodesia and Nyasaland: the terminus of railways by which both countries have access to the sea. The line to Nyasaland crosses the Zambesi by the longest bridge in the world, which is well over two miles long. From this point a line is being built up the Zambesi valley to a coalfield near Tete. A railway is also being built to Lake Nyasa from the coast opposite to the island of Mozambique, on which stands the city of the same name; it was long the Portuguese capital and still has a fine old fort.

Mozambique Territory has large plantation crops, principally cotton, copra, sugar, and sisal. In a recent year its exports of its own produce amounted to nearly £10,000,000.

SPANISH AFRICA

SPANISH MOROCCO is in two parts—northern and southern. In the north, Spain owns several places, chiefly Ceuta (population 70,000), opposite Gibraltar, and Melilla (80,000), and controls a strip of Northern Morocco about twice as large as Wales. This includes the whole of the Mediterranean coast and part of the Atlantic coast, except around Tangier city (100,000), where an area of 225 square miles is under international control. The population of the Spanish Zone is about a million; capital Tetuan (75,000). It is a mountainous country, rich in minerals, exporting large quantities of iron ore through Melilla.

In Southern Morocco, Spain has the country around the port of Ifni. Beyond

this, to the southern frontier, is a Spanish protectorate, and beyond the frontier extends the Spanish Sahara, with an estimated area of 100,000 square miles, supporting a small nomad population. Westward are the volcanic Canary Islands, known of old as the Fortunate Isles, and still a favourite health resort. Scattered over 250 miles of sea, they include seven inhabited islands. The total area is 2900 square miles, and the population 750,000, mostly living in Grand Canary and Teneriffe, including their respective capitals, Las Palmas (126,000) and Santa Cruz (92,000). —The Peak of Teneriffe rises to over 12,000 feet. Fruit and vegetables are grown for export, and Canary bananas are much sought after.

Spanish Guinea includes a mainland territory, Rio Muni, of 10,000 square miles, still mostly undeveloped, and several outlying volcanic islands. The Governor lives in the largest island, Fernando Po, which rises to 9000 feet and is noted for its loveliness. Santa Isabel, the capital, stands on a cliff above a deep-water harbour, part of an old crater, with which it is connected by a cog-wheel railway. Cocoa and coffee are largely grown.

LIBERIA

LIBERIA is a negro republic on the Guinea coast of West Africa ; it has an area of 43,000 square miles and a population of about two millions. It was founded by Americans as a home for freed slaves, was constituted as a free and independent republic in 1847, but is still very backward. For a long time the newcomers and their descendants did little to develop the country, and were on bad terms with the other inhabitants. Now the United States Government and business men are giving advice and financial aid to put things on a better footing. Monrovia (population 10,000) is the capital, Marshall the chief port. The biggest export is rubber.

ABYSSINIA

ABYSSINIA (more correctly Ethiopia) adopted Christianity in the 4th century, as taught by the Coptic Church in Egypt, and has kept to it ever since. In 1896 the Italians claimed a protectorate, but were defeated at the battle of Adowa. Trouble broke out again in 1936, and Abyssinia was ruthlessly con-

quered, but during the Second World War the British restored the Emperor Haile Selassie to his throne.

With an estimated population of 15,000,000, Abyssinia ranges from stifling lowlands to bracing highlands. Addis Ababa, the capital (population 150,000), lies at over 8000 feet, and there are mountains up to 14,000 feet. Lake Tsana (6000 feet) is the source of the Blue Nile. From Addis Ababa a railway descends to the coast at Jibuti (486 miles), in French Somaliland. The Italians have left a legacy of good roads.

Abyssinia is a feudal State; the Emperor's title is "King of kings." The subordinate "kings" do not always take kindly to reforms, but the Emperor, with British help, is gradually raising his country's standards. A wide range of crops is grown at different levels, there are valuable forests, and millions of cattle and sheep find pasture on the high plateaus.

FORMER ITALIAN AFRICA

After the overthrow of Italian rule in Africa during the Second World War, Italy's colonial possessions were placed under military administration pending a decision as to their future.

NORTH-EAST of Abyssinia, between it and the Red Sea, is Eritrea, a mountainous land with under a million people. Asmara, the capital, 75 miles from the coast, lies 7700 feet above sea level. A railway climbs up to it from Massawa, the chief port, and continues inland. Livestock are numerous, and hides and skins are largely exported.

South-east of Abyssinia, between it and the Indian Ocean, Somalia is low-lying and semi-desert : on 200,000 square miles it supports a million people. Livestock include two million sheep, nearly a million cattle, and as many camels. Cultivated areas border the Webi Shebeli and Juba rivers, and from Mogadishu, the chief port and capital, a railway of 70 miles serves a fertile district.

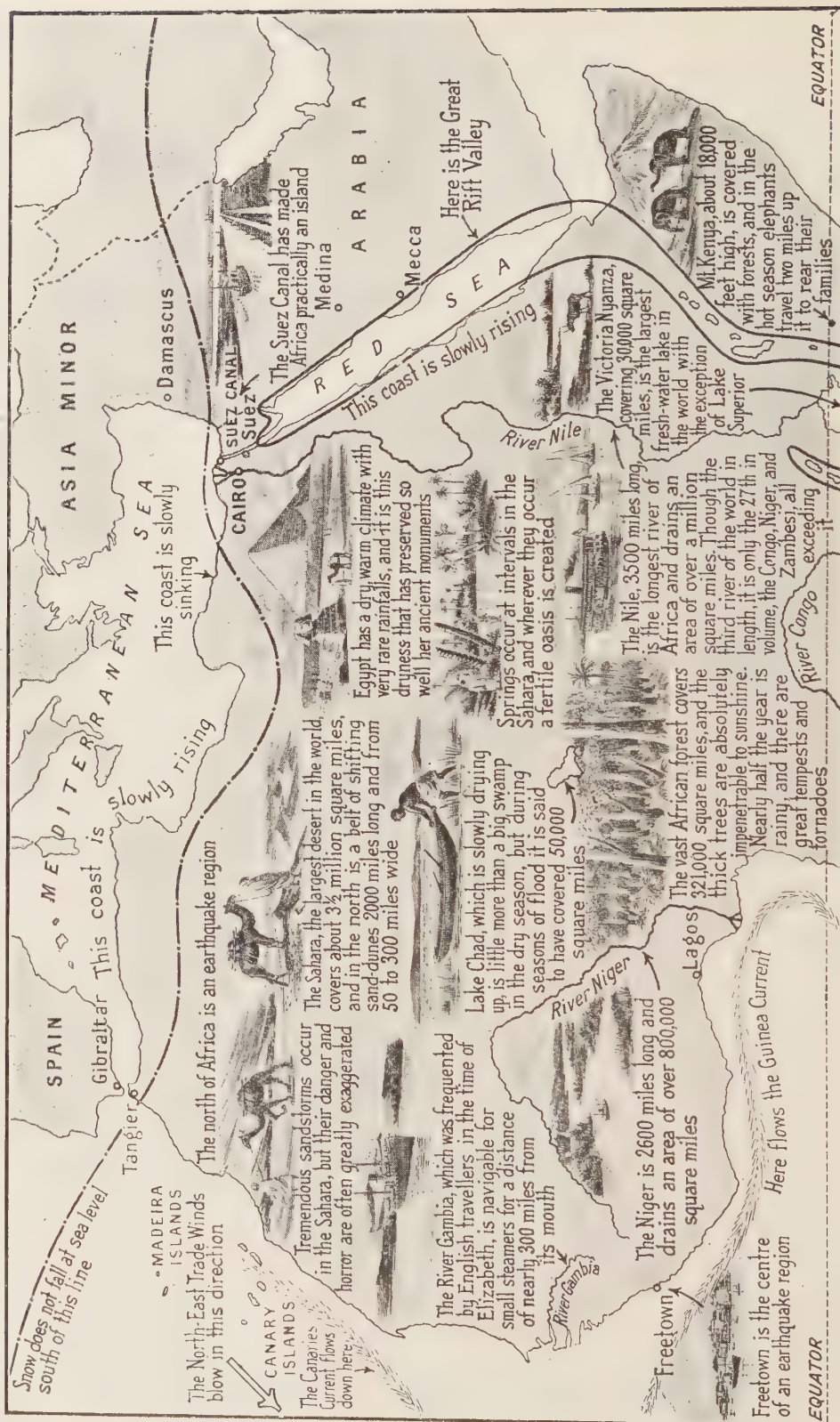
Libya, in North Africa, includes Tripolitania, with Tripoli city as capital and chief port, and Cyrenaica, where Benghazi is the premier city. In the coastal zone, cereals and fruits (dates, grapes, oranges, olives, and so on) are grown and livestock raised. Farther south, despite oases, the Saharan wastes make up most of the territory's huge area, estimated at 680,000 square miles.

MAPS AND PICTURES OF AFRICA



A BIRD'S-EYE VIEW OF AFRICA, SHOWING ITS CHIEF RIVERS AND MOUNTAINS, AND THE GREAT SAHARA DESERT COVERING ONE-FIFTH OF ITS SURFACE

THE INTERESTING PHYSICAL FEATURES OF THE AFRICAN CONTINENT



The South Equatorial Current flows in this direction

• ASCENSION

The South-East Trade Winds blow in this direction

Ascension Island, a mass of volcanic rock 1000 miles from the African coast, has the driest and most salubrious climate in the world. It lacks water, however, and has only one cultivable spot, an oasis amid lava and scoriae

• STELENA

More than three quarters of Africa falls within the Torrid Zone, and the Sahara forms a vast natural furnace, the heated atmosphere generated in it being carried by the winds over distant lands and seas

St Helena, 1200 miles from the nearest point of Africa, is a huge mass of rock of volcanic origin, 47 square miles in area

Snow does not fall at sea level north of this line



The area of Africa is 11,500,000 square miles, more than three times the size of Europe and nearly a quarter the land surface of the globe. Here is the United Kingdom to the same scale

The Benguela Current flows up here

CAPE TOWN

Table Mountain, at the extreme south of Africa, is often covered with a cloud of mist which is called the Tablecloth

The Kalahari Desert is a great area of gravelly desert almost entirely devoid of plant life

The Zambesi is about 1600 miles long and in 220 miles of its course there are 72 cataracts and rapids

Here are the Victoria Falls, a great cataract on the Zambesi, 3000 feet wide and 360 feet high, one of the grandest waterfalls in the world

Lake Tanganyika is 15,000 square miles in area, or about twice the size of Wales

The Congo, over 3000 miles long, drains an area of more than 1,300,000 square miles and discharges a great volume of fresh water that is perceptible many miles at sea

Here is the Great Rift Valley

Mt Kilimanjaro, 19,680 feet high, is Africa's highest peak

Lake Njasa, covering 14,200 square miles, averages 600 feet deep and teems with fish

Some think Madagascar is the last remains of a continent now submerged in the Indian Ocean

MADAGASCAR

The South Equatorial Current flows in this direction

The Agulhas Current flows here

Madagascar, about 1000 miles long, is slowly rising from the sea. With an area of about 230,000 square miles it is the fifth largest island in the world, Australia being the largest

The total length of the coast line of Africa is about 16,000 miles

[illegible]



ALGIERS, CAPITAL OF ALGERIA, BUILT ON A HILLSIDE OVERLOOKING THE MEDITERRANEAN



A MARKET-PLACE
IN TUNIS



THE GREAT MOSQUE OF
ALGIERS



A MOSQUE IN FEZ, A CAPITAL
OF MOROCCO



MARINE AVENUE IN TUNIS



A MOSQUE IN TUNIS



AN OLD SUDANESE MOSQUE DUG OUT OF THE SAND AT DIENNE, IN FRENCH SUDAN



A PALM-SHADED STREET
IN BISKRA



THE SOUTH GATE
OF TANGIER



THE VILLAGE MOSQUE
OF BISKRA

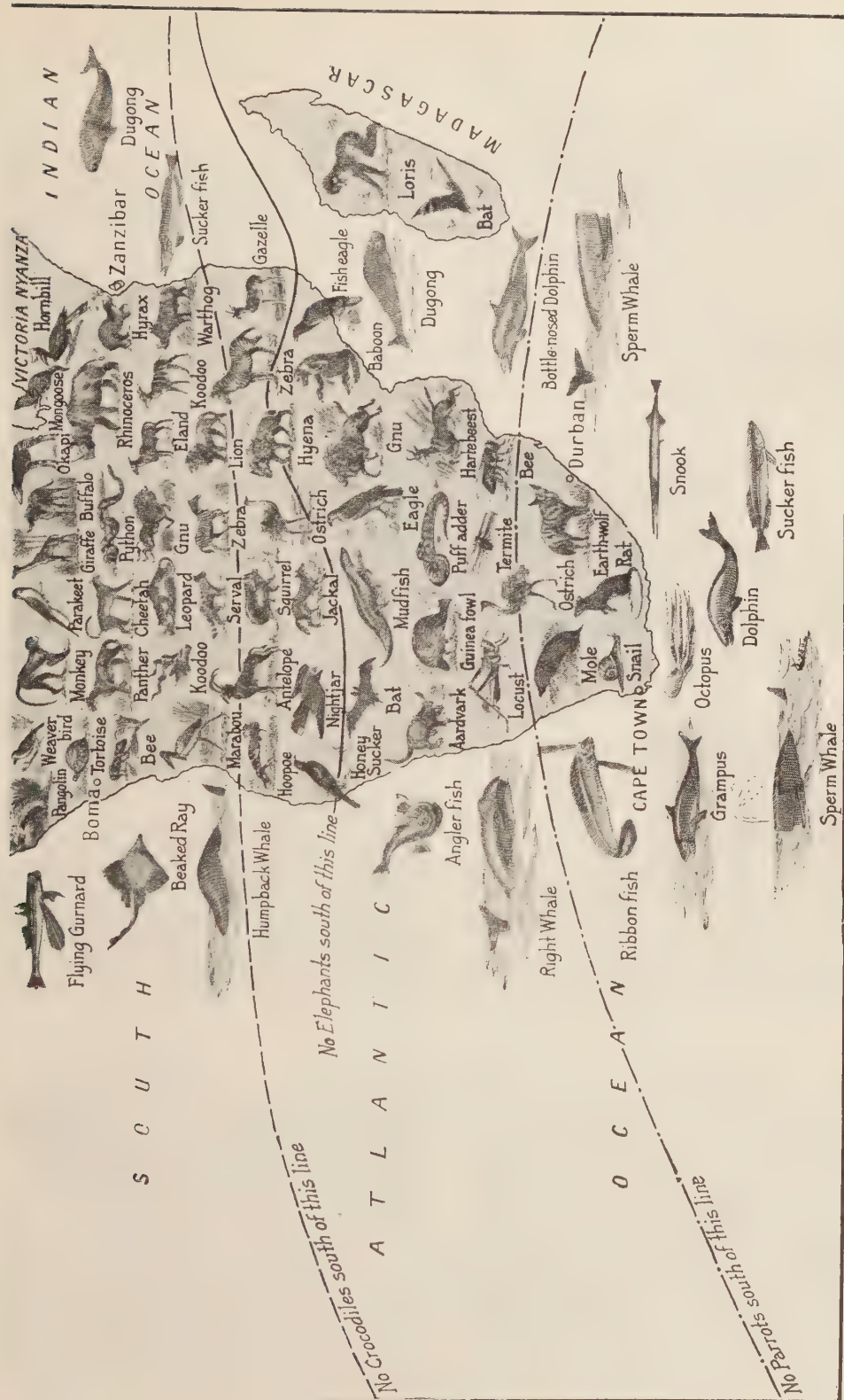


THE HOTEL DE VILLE AT BISKRA IN ALGERIA

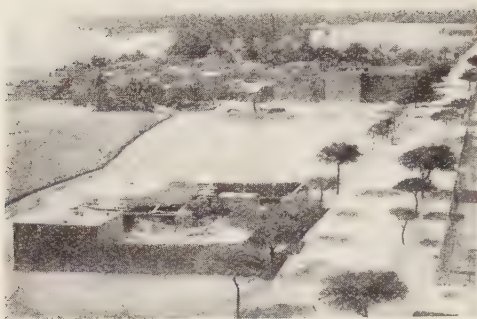


THE MOSQUE OF SIDI-EL-RAMAN IN ALGIERS

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THE AFRICAN CONTINENT TEEMS WITH WILD LIFE, INCLUDING SUCH INTERESTING CREATURES AS THE LION, THE ELEPHANT, AND THE HIPPOPOTAMUS



A GENERAL VIEW OF BISKRA



THE PORT OF BONA IN ALGERIA



A NATIVE VILLAGE
IN SENEGAL



THE BERDAIN GATE
OF MEKNES



A WELL NEAR JIBUTI IN
FRENCH SOMALILAND



THE RAMPARTS OF MARRAKESH, OR MOROCCO CITY



THE SULTAN'S PALACE AT RABAT



A BOULEVARD IN CASABLANCA



RUE DE COMMERCE, AT TAMATAVE, MADAGASCAR

The pictures on these pages are by Donald McLeish, the E.N.A., and others

One Thousand Poems of All Times and All Countries

Shelley's Lament for Keats

THE poet Shelley had some acquaintance, though not very intimate, with John Keats, and when Keats died he lamented him, under the poetical name of Adonais, in one of the great elegies of English literature. The poem is too long to be given here, but below is a selection from its 55 stanzas. Shelley calls on the Muse Urania to join him in his grief. He compares the old misused poet John Milton and the young misused poet John Keats; but Keats has passed beyond man's disdain and neglect to a loftier destiny. A description of the last resting-place of the poet in Rome follows, and then, in a great finale, Shelley imagines his own spirit, "borne darkly, fearfully, afar," joining the soul of Adonais in the realms of the Eternal.

ADONAI

I WEEP for Adonais—he is dead!

O, weep for Adonais! though our tears
Thaw not the frost which binds so dear a
head!

And thou, sad Hour, selected from all
years

To mourn our loss, rouse thy obscure
compeers,

And teach them thine own sorrow, say:
"With me

Died Adonais; till the Future dares

Forget the Past his fate and fame shall be
An echo and a light unto eternity!"

O WEEP for Adonais—he is dead!

Wake, melancholy Mother, wake and
weep!

Yet wherefore? Quench within their
burning bed

Thy fiery tears, and let thy loud heart
keep,

Like his, a mute and uncomplaining sleep;
For he is gone where all things wise and
fair

Descend; oh, dream not that the amorous
Deep

Will yet restore him to the vital air;

Death feeds on his mute voice, and laughs
at our despair.

Wishing to make the contrast between old and young poet who had been scorned and ill-used in their day, Shelley now turns to Milton, and from him leads again up to Keats the last and youngest sufferer.

MOST musical of mourners, weep again!

Lament anew, Urania! He died,

Who was the Sire of an immortal strain,
Blind, old and lonely, when his country's
pride,

The priest, the slave, and the liberticide,
Trampled and mocked with many a
loathèd rite

Of lust and blood; he went, unterrified,

Into the gulf of death; but his clear Sprite
Yet reigns o'er earth; the third among the
sons of light.

MOST musical of mourners, weep anew!
Not all to that bright station dared
to climb;

And happier they their happiness who
knew,

Whose tapers yet burn through that night
of time

In which suns perished; others more
sublime,

Struck by the envious wrath of man or
god,

Have sunk, extinct in their refulgent
prime;

And yet some live, treading the thorny
road

Which leads, through toil and hate, to
Fame's serene abode.

BUT now thy youngest, dearest one, has
perished,

The nursling of thy widowhood, who grew
Like a pale flower by some sad maiden
cherished,

And fed with true-love tears instead of
dew;

Most musical of mourners, weep anew!

Thy extreme hope, the loveliest and the
last,

The bloom, whose petals, nipped before
they blew,

Died on the promise of the fruit, is waste;
The broken lily lies—the storm is overpast.

After an outburst against the harsh critics in the Press for their treatment of Keats, the poet regains his calm, and, rebuking himself for the violence he has shown, says:

PEACE, peace! he is not dead, he doth
not sleep;

He hath awakened from the dream of life.

He passes on into the most tender and lovely part of the poem, in which he develops the idea that the poet has escaped all human woes and has been re-absorbed into the Creative Power from whence he came.

HE has outsoared the shadow of our night;
 Envy and calumny and hate and pain,
 And that unrest which men miscall delight,
 Can touch him not and torture not again;
 From the contagion of the world's slow
 stain
 He is secure, and now can never mourn
 A heart grown cold, a head grown grey in
 vain;
 Nor, when the spirit's self has ceased to
 burn,
 With sparkless ashes load an unlamented
 urn.

He is made one with Nature; there is heard
 His voice in all her music, from the moan
 Of thunder to the song of night's sweet
 bird;
 He is a presence to be felt and known
 In darkness and in light, from herb and
 stone,
 Spreading itself where'er that Power may
 move
 Which has withdrawn his being to its own;
 Which wields the world with never-
 wearied love,
 Sustains it from beneath, and kindles it
 above.

He is a portion of the loveliness
 Which once he made more lovely: he doth
 bear
 His part, while the one Spirit's plastic
 stress
 Sweeps through the dull, dense world,
 compelling there
 All new successions to the forms they wear;
 Torturing th' unwilling dross that checks
 its flight
 To its own likeness, as each mass may bear;
 And bursting in its beauty and its might
 From trees and beasts and men into the
 Heaven's light.

After a vision of the poet joining the dead poets who are "inheritors of unfulfilled renown," but yet are "robed in dazzling immortality," Shelley leaves these empyrean heights and leads us to the grave in Rome—the grave of which he said "it might make one in love with death to think that one should be buried in so sweet a place."

OR go to Rome, which is the sepulchre,
 Oh, not of him, but of our joy; 'tis
 nought
 That ages, empires, and religions there
 Lie buried in the ravage they have
 wrought;
 For such as he can lend; they borrow not

Glory from those who made the world
 their prey;
 And he is gathered to the kings of thought
 Who waged contention with their time's
 decay,
 And of the past are all that cannot pass
 away.

Go thou to Rome—at once the paradise,
 The grave, the city, and the wilderness;
 And where its wrecks like shattered
 mountains rise,
 And flowering weeds, and fragrant copses
 dress
 The bones of Desolation's nakedness,
 Pass, till the spirit of the spot shall lead
 Thy footsteps to a slope of green access
 Where, like an infant's smile, over the dead
 A light of laughing flowers along the grass
 is spread;

And grey walls moulder round, on which
 dull Time
 Feeds, like slow fire upon a hoary brand;
 And one keen pyramid with wedge
 sublime,
 Pavilioning the dust of him who planned
 This refuge for his memory, doth stand
 Like flame transformed to marble; and
 beneath
 A field is spread, on which a newer band
 Have pitched in Heaven's smile their camp
 of death,
 Welcoming him we lose with scarce ex-
 tinguished breath.

Here pause: these graves are all too young
 as yet
 To have outgrown the sorrow which con-
 signed
 Its charge to each; and if the seal is set
 Here, on one fountain of a mourning mind,
 Break it not thou! too surely shalt thou
 find
 Thine own well full, if thou returnest home,
 Of tears and gall. From the world's bitter
 wind
 Seek shelter in the shadow of the tomb.
 What Adonais is, why fear we to become?

And now begins the great finale of the poem. The poet sees all life as a temporary vision, and the human spirit as an emanation from God going back to God, and, freed from earthly restraints, he rises on the wings of imagination to join the soul of Adonais in the realms of the Eternal.

THE One remains, the many change and
 pass;
 Heaven's light for ever shines, Earth's
 shadows fly;

Life, like a dome of many-coloured glass,
Stains the white radiance of Eternity,
Until Death tramples it to fragments.

Die,
If thou wouldst be with that which thou
dost seek!

Follow where all is fled! Rome's azure
sky,

Flowers, ruins, statues, music, words, are
weak

The glory they transfuse with fitting
truth to speak.

That Light whose smile kindles the
Universe,

That Beauty in which all things work and
move,

That Benediction which the eclipsing
Curse

Of birth can quench not, that sustaining
Love

Which, through the web of being blindly
wove

By man and beast and earth and air and
sea,

Burns bright or dim, as each are mirrors of
The fire for which all thirst, now beams
on me,

Consuming the last clouds of cold mor-
tality.

The breath whose might I have invoked
in song

Descends on me; my spirit's bark is driven
Far from the shore, far from the trembling
throng

Whose sails were never to the tempest
given;

The massy earth and spherèd skies are
riven!

I am borne darkly, fearfully, afar;
Whilst, burning through the inmost veil
of Heaven,

The soul of Adonais, like a star,
Beacons from the abode where the
Eternal are.

CHERRY-RIPE

This little lyric in praise of Julia's smiling lips was written
by Robert Herrick, who was born in 1591 and died in 1634.
He was a master of the art of writing lyrical poetry.

CHERRY-ripe, ripe, ripe, I cry,
Full and fair ones; come and buy.

If so be you ask me where
They do grow, I answer: There
Where my Julia's lips do smile;
There's the land, or cherry-isle,
Whose plantations fully show
All the year where cherries grow.

TILL WE HAVE BUILT JERUSALEM

William Blake, the mystical poet and painter, who was
born in 1757 and died in 1827, wrote in visions, which must
always have a poetical interpretation. He speaks through
spiritual suggestions that have a moving but indefinite
beauty, which characteristic is illustrated in these much-
quoted yet evasive lines. They are really an appeal for
the reign of the Christ-like spirit in the life of England

AND did those feet in ancient time
Walk upon England's mountains
green?

And was the holy Lamb of God
On England's pleasant pastures seen?

And did the Countenance Divine
Shine forth upon our clouded hills?
And was Jerusalem builded here
Among these dark Satanic Mills?

Bring me my bow of burning gold!
Bring me my arrows of desire!
Bring me my spear: O clouds, unfold!
Bring me my chariot of fire!

I will not cease from mental fight,
Nor shall my sword sleep in my hand,
Till we have built Jerusalem
In England's green and pleasant land.

AE FOND KISS

This parting love song by Robert Burns was a real parting
that actually took place and lasted. The lady concerned
was the friend with whom the poet carried on a corre-
spondence under her pen-name of Clarinda. Sir Walter
Scott once said that the last four lines of the second verse
"contain the essence of a thousand love tales."

AE fond kiss, and then we sever!
Ae fareweel, alas, for ever!
Deep in heart-wrung tears I'll pledge thee,
Warring sighs and groans I'll wage thee.
Who shall say that fortune grieves him
While the star of hope she leaves him?
Me, nae cheerfu' twinkle lights me,
Dark despair around benights me.

I'll ne'er blame my partial fancy,
Naething could resist my Nancy;
But to see her was to love her,
Love but her, and love for ever.
Had we never loved sae kindly,
Had we never loved sae blindly,
Never met, or never parted,
We had ne'er been broken-hearted.

Fare thee weel, thou first and fairest!
Fare thee weel, thou best and dearest!
Thine be ilka joy and treasure,
Peace, enjoyment, love, and pleasure.
Ae fond kiss, and then we sever;
Ae fareweel, alas, for ever!
Deep in heart-wrung tears I'll pledge thee,
Warring sighs and groans I'll wage thee.

LOUD IS THE VALE

This poem tells the story of Wordsworth's mind as he took an evening walk in the Lake District, in September 1806, after he had read in the newspaper that the popular statesman of that day, Charles James Fox, lay dying. A heavy storm had passed, and all the mountain streams were rushing into the valley. The poet was calmed by the thought that the passing from Earth of men's leaders is but an incident in the universal drama of God's great design.

Loud is the vale! the voice is up
With which she speaks when storms
are gone,
A mighty unison of streams!
Of all her voices, one!

Loud is the vale; this inland depth
In peace is roaring like the sea;
Yon star upon the mountain-top
Is listening quietly.

Sad was I, even to pain deprest,
Importunate and heavy load!
The Comforter hath found me here
Upon this lonely road;

And many thousands now are sad,
Wait the fulfilment of their fear;
For he must die who is their stay,
Their glory disappear.

A power is passing from the earth
To breathless Nature's dark abyss;
But when the great and good depart
What is it more than this:

Tnat Man, who is from God sent forth,
Doth yet again to God return?
Such ebb and flow must ever be,
Then wherefore should we mourn?

HOME NO MORE HOME TO ME

When Robert Louis Stevenson left his homeland, in 1887, to nourish his failing strength in high, dry parts of America and farther afield, he seemed to have a feeling that he would not return. Not long before his death in the Samoan Islands he sent home *Songs of Travel*, written during the seven years of his wanderings, and into them came farewell strains which afterwards seemed prophetic. This poem, written after the break up of the Scottish family household, shows how pathetic memories haunted his exile.

HOME, no more home to me, whither
must I wander?

Hunger my driver, I go where I must.
Cold blows the winter wind over hill and
heather;

Thick drives the rain, and my roof is
in the dust.
Loved of wise men was the shade of my
roof-tree.

The true word of welcome was spoken
in the door:

Dear days of old, with the faces in the
firelight,

Kind folks of old, you come again no
more.

Home was home then, my dear, full of
kindly faces;

Home was home then, my dear, happy
for the child.

Fire and the windows bright glittered on
the moorland;

Song, tuneful song, built a palace in the
wild.

Now, when day dawns on the brow of the
moorland,

Lone stands the house, and the chimney-
stone is cold.

Lone let it stand now the friends are all
departed,

The kind hearts, the true hearts, that
loved the place of old.

Spring shall come, come again, calling up
the moor-fowl;

Spring shall bring the sun and rain,
bring the bees and flowers;

Red shall the heather bloom over hill
and valley,

Soft flow the stream through the even-
flowing hours;

Fair the day shine as it shone on my
childhood,

Fair the day shine on the house with
open door;

Birds come and cry there and twitter
in the chimney,

But I go for ever and come again no
more.

LEISURE

These lines are perhaps the best example of the natural simple poetry of W. H. Davies, who won attention by his descriptions of his travel experiences as a tramp. He saw the worlds of outdoor life and of human character with a poet's eye and had a rare intuition for romance as universally felt. He had, too, a fine gift of selective criticism, and his reputation will be constantly growing as we grow up.

His poems are published by Messrs. Jonathan Cape.

WHAT is this life if, full of care,

We have no time to stand and stare?
No time to stand beneath the boughs
And stare as long as sheep or cows.

No time to see, when woods we pass,
Where squirrels hide their nuts in grass.

No time to see, in broad daylight,
Streams full of stars, like skies at night.

No time to turn at Beauty's glance,
And watch her feet, how they can dance.

No time to wait till her mouth can
Enrich that smile her eyes began.

A poor life this if, full of care,
We have no time to stand and stare.

SONG

Shelley had a keen poetic appreciation of the unhappiness he caused himself. He turned the edge of his troubles by putting them into poetry. In this song he is so conscious of doing it that he almost smiles at himself. And then how charmingly he enumerates the delightful things he loves that contradict his own despondency!

RARELY, rarely, comest thou,
Spirit of Delight!
Wherefore hast thou left me now
Many a day and night?
Many a weary night and day
'Tis since thou art fled away.

How shall ever one like me
Win thee back again?
With the joyous and the free
Thou wilt scoff at pain.
Spirit false! thou hast forgot
All but those who need thee not.

As a lizard with the shade
Of a trembling leaf,
Thou with sorrow art dismayed;
Even the sighs of grief
Reproach thee, that thou art not near,
And reproach thou wilt not hear.

Let me set my mournful ditty
To a merry measure;
Thou wilt never come for pity,
Thou wilt come for pleasure;
Pity then will cut away
Those cruel wings, and thou wilt stay.

I love all that thou lovest,
Spirit of Delight!
The fresh Earth in new leaves dressed,
And the starry night;
Autumn evening, and the morn
When the golden mists are born.

I love snow, and all the forms
Of the radiant frost;
I love waves, and winds, and storms,
Everything almost
Which is Nature's, and may be
Untainted by man's misery.

I love tranquil solitude,
And such society
As is quiet, wise, and good;
Between thee and me
What difference? but thou dost possess
The things I seek, not love them less.

I love Love—though he has wings,
And like light can flee;
But, above all other things,
Spirit, I love thee.
Thou art love and life! Oh, come,
Make once more my heart thy home.

AFTERWARDS

Of all the poetry with which Thomas Hardy surprised the world in his later years this suggestion of what his neighbours might say of him when he was gone is the most delicate and tender. It brought a new friendship for him into every heart. Two verses of the poem are here omitted.

WHEN the Present has latched its
postern behind my tremulous stay,
And the May month flaps its glad green
leaves like wings,
Delicate-filmed as new-spun silk, will the
neighbours say,
"He was a man who used to notice
such things?"

If it be in the dusk when, like an eyelid's
soundless blink,
The dewfall-hawk comes crossing the
shades to alight
Upon the wind-warped upland thorn, a
gazer may think,
"To him this must have been a familiar
sight."

And will any say when my bell of quittance
is heard in the gloom,
And a crossing breeze cuts a pause in
its out-rollings,
Till they rise again, as they were a new
bell's boom,
"He hears it not now, but used to notice
such things?"

WE MUST BE FREE OR DIE

The year 1802 was one of terrible danger to England. She had made a hampering and insincere peace with Napoleon, which he was obviously using to prepare for her complete overthrow. Every action of his showed that he was preparing for deadly war, and that England was the enemy. This was the time when Wordsworth penned the proud claim for British freedom and manhood in this rousing sonnet.

IT is not to be thought of that the flood
Of British freedom, which, to the
open sea
Of the world's praise, from dark antiquity
Hath flowed, "with pomp of waters,
unwithstood,"
Roused though it be full often to a mood
Which spurns the check of salutary bands.
That this most famous stream in bogs
and sands
Should perish; and to evil and to good
Be lost for ever. In our halls is hung
Armoury of the invincible knights of old:
We must be free or die who speak the
tongue
That Shakespeare spake; the faith and
morals hold
Which Milton held. In everything we are
sprung
Of Earth's first blood, have titles manifold.

ODE TO DUTY

This ode to Duty shows Wordsworth writing in his more massive style. The determined simplicity of his earlier poems is laid aside, and he takes the formal measure of Gray's Ode to Adversity as his model, and personifies duty in the eighteenth-century manner. He is using the idea to strengthen his own character. If that were all, the poem would be mainly useful. But, as in the second, third, and especially the sixth stanzas, the poet's exhortations pass into glorious, me odious poetry, ethereal in thought.

STERN Daughter of the Voice of God!

O Duty! if that name thou love,
Who art a light to guide, a rod
To check the erring, and reprove;
Thou, who art victory and law
When empty terrors overawe;
From vain temptations dost set free;
And calm'st the weary strife of frail
humanity!

There are who ask not if thine eye
Be on them; who, in love and truth,
Where no misgiving is, rely
Upon the genial sense of youth;
Glad hearts! without reproach or blot;
Who do thy work, and know it not:
Oh! if through confidence misplaced
They fail, thy saving arms, dread Power,
around them cast.

Serene will be our days and bright,
And happy will our nature be,
When love is an unerring light,
And joy its own security.
And they a blissful course may hold,
Even now, who, not unwisely bold,
Live in the spirit of this creed,
Yet seek thy firm support, according to
their need.

I, loving freedom, and untried;
No sport of every random gust,
Yet being to myself a guide,
Too blindly have reposed my trust:
And oft, when in my heart was heard
Thy timely mandate, I deferred
The task, in smoother walks to stray;
But thee I now would serve more strictly,
if I may.

Through no disturbance of my soul,
Or strong compunction in me wrought,
I supplicate for thy control;
But in the quietness of thought:
Me thus unchartered freedom tires;
I feel the weight of chance-desires:
My hopes no more must change their name,
I long for a repose that ever is the same.

Stern Lawgiver! yet thou dost wear
The Godhead's most benignant grace;

Nor know we anything so fair
As is the smile upon thy face:
Flowers laugh before thee on their beds,
And fragrance in thy footing treads;
Thou dost preserve the stars from wrong;
And the most ancient heavens, through
Thee, are fresh and strong.

To humbler functions, awful Power!
I call thee: I myself commend
Unto thy guidance from this hour;
Oh, let my weakness have an end!
Give unto me, made lowly wise,
The spirit of self-sacrifice;
The confidence of reason give;
And in the light of truth thy bondman let
me live!

THE ISOLATION OF GENIUS

"Uneasy lies the head that wears a crown" has its counterpart in all forms of success. Envy, detraction, ambitious rivalry, challenge those who reach life's summits. In these lines, which are taken from the third canto of *Childe Harold*, Lord Byron sets forth that truth in poetic imagery.

HE who ascends to mountain-tops shall
find
The loftiest peaks most wrapt in clouds
and snow;
He who surpasses or subdues mankind
Must look down on the hate of those
below;
Though high above the sun of glory
glow,
And far beneath the earth and ocean
spread,
Round him are icy rocks, and loudly blow
Contending tempests on his naked head,
And thus reward the toils which to those
summits led.

IN TIME OF THE BREAKING OF NATIONS

The great sensations of history come and go, but the homely toil and simple lives of men and women continue, almost unnoticed, that the Earth may bring forth her increase; and they make up in the truest sense the life of mankind. This thought is here expressed with a noble simplicity by Thomas Hardy, the great English novelist and poet.

ONLY a man harrowing clods
In a slow, silent walk
With an old horse that stumbles and nods
Half asleep as they stalk.

Only thin smoke without flame
From the heaps of couch grass;
Yet this will go onward the same
Though dynasties pass.

Yonder a maid and her wight
Come whispering by;
War's annals will cloud into night
Ere their story die.

FAIR DAFFODILS

Robert Herrick, the writer of this charming song about the daffodils, was a clergyman who lived from 1591 to 1634, and wrote an immense amount of poetry, many of his poems taking rank among the most beautiful in our language.

FAIR daffodils, we weep to see

You haste away so soon;

As yet the early-rising sun

Has not attained his noon.

Stay, stay

Until the hasting day

Has run

But to the evensong;

And, having prayed together, we

Will go with you along.

We have short time to stay, as you,

We have as short a spring;

As quick a growth to meet decay

As you, or anything.

We die,

As your hours do, and dry

Away

Like to the summer's rain;

Or as the pearls of morning's dew,

Ne'er to be found again.

BEFORE ACTION

Here is one of the finest of the many fine poems written by soldiers during the First World War. William Noel Hodgson, the writer, was the son of the Bishop of Ipswich. He was a fine soldier and athlete at school and college. This prayer-poem, with its love of the beauty of Earth, resigned with only a sigh, was written four days before the writer fell in the advance on the Somme.

By all the glories of the day

And the cool evening's benison,

By that last sunset touch that lay

Upon the hills when day was done,

By beauty lavishly outpoured

And blessings carelessly received,

By all the days that I have lived,

Make me a soldier, Lord.

By all of all man's hopes and fears,

And all the wonders poets sing,

The laughter of unclouded years,

And every sad and lovely thing;

By the romantic ages stored

With high endeavour that was his,

By all his mad catastrophes,

Make me a man, O Lord.

I, that on my familiar hill

Saw with uncomprehending eyes

A hundred of Thy sunsets spill

Their fresh and sanguine sacrifice;

Ere the sun swings his noonday sword

Must say goodbye to all of this;

By all delights that I shall miss,

Help me to die, O Lord.

BEYOND THE LAST LAMP

The poet's power of fixing for ever in the minds of men a picture stamped on his own mind is illustrated wonderfully in this poem by Thomas Hardy. Walking near Tooting Common, in suburban London, he twice passed a man and woman in long, earnest, and sad talk. He did not know, and we do not know, who they were, or what was their trouble, but the tragedy of their looks is passed on by his poetic art to all the world to be a lasting problem.

WHILE rain, with eve in partnership,

Descended darkly, drip, drip, drip,

Beyond the last lone lamp I passed

Walking slowly, whispering sadly,

Two linked loiterers, wan, downcast:

Some heavy thought constrained each face

And blinded them to time and place.

The pair seemed lovers, yet absorbed

In mental scenes no longer orb'd

By love's young rays. Each countenance,

As it slowly, as it sadly,

Caught the lamplight's yellow glance,

Held in suspense a misery

At things which had been or might be.

When I retr'd that watery way

Some hours beyond the droop of day,

Still I found pacing there the twain

Just as slowly, just as sadly,

Heedless of the night and rain.

One could but wonder who they were,

And what wild woe detained them there.

Though thirty years of blur and blot

Have slid since I beheld that spot,

And saw in curious converse there

Moving slowly, moving sadly,

That mysterious tragic pair,

Its olden look may linger on—

All but the couple; they have gone.

Whither? Who knows, indeed? . . . And yet

To me, when nights are weird and wet,

Without those comrades there at tryst

Creeping slowly, creeping sadly,

That lone lane does not exist.

There they seem brooding on their pain,

And will, while such a lane remain.

FAITH

These verses by Fanny Kemble, the famous actress who died in 1893, are a warning against allowing deceitful people to make us feel that everybody is deceitful.

BETTER trust all, and be deceived,

And weep that trust and that

deceiving,

Than doubt one heart that if believed,

Had blessed one's life with true be-

lieving.

O, in this mocking world too fast

The doubting fiend o'ertakes our youth!

Better be cheated to the last

Than lose the blessed hope of truth.

SHUFFLE-SHOON AND AMBER-LOCKS

That sweet-minded writer of verses for children, the American Eugene Field, here combines the charm of childhood with the gentle pathos of old age, the forward dreams of youth and the backward dreams of gracious memory.

SHUFFLE-SHOON and Amber-Locks

Sit together, building blocks ;
 Shuffle-Shoon is old and grey,
 Amber-Locks a little child;
 But together at their play
 Age and youth are reconciled,
 And with sympathetic glee
 Build their castles fair to see.

"When I grow to be a man,"
 So the wee one's prattle ran,
 "I shall build a castle so,
 With a gateway broad and grand;
 Here a pretty vine shall grow,
 There a soldier guard shall stand;
 And the tower shall be so high
 Folks will wonder, by-and-by!"

Shuffle-Shoon quoth: "Yes, I know;
 Thus I builded long ago!
 Here a gate, and there a wall,
 Here a window, there a door;
 Here a steeple wondrous tall
 Riseth ever more and more!
 But the years have levelled low
 What I builded long ago!"

So they gossip at their play,
 Heedless of the fleeting day;
 One speaks of the Long Ago,
 Where his dead hopes buried lie;
 One with chubby cheeks aglow
 Prattleth of the By-and-by;
 Side by side they build their blocks,
 Shuffle-Shoon and Amber-Locks.

WYNKEN, BLYNKEN, AND NOD

Eugene Field is among the choicest of the poets who have written for children, and this is often considered the best of all his poems. The explanation of it comes in the last verse, which tells us plainly who Wynken, Blynken, and Nod are, and how they went off together into the delightful land of childish dreams.

WYNKEN, Blynken, and Nod one night

Sailed off in a wooden shoe,
 Sailed on a river of crystal light
 Into a sea of dew.

"Where are you going, and what do you wish?"

The old Moon asked the three.

"We have come to fish for the herring fish
 That live in this beautiful sea;
 Nets of silver and gold have we,"

Said Wynken,
 Blynken, and Nod,

The old Moon laughed and sang a song
 As they rocked in the wooden shoe;
 And the wind that sped them all night long
 Ruffled the waves of dew;
 The little stars were the herring fish
 That lived in that beautiful sea.
 "Now cast your nets wherever you wish,
 But never afeared are we!"
 So cried the stars to the fishermen three
 Wynken,
 Blynken, and Nod.

All night long their nets they threw
 For the fish in the twinkling foam,
 Then down from the sky came the wooden
 shoe,
 Bringing the fishermen home;
 'Twas all so pretty a sail, it seemed
 As if it could not be;
 And some folk thought 'twas a dream
 they'd dreamed
 Of sailing that beautiful sea;
 But I shall name you the fishermen three,
 Wynken,
 Blynken, and Nod.

Wynken and Blynken are two little eyes,
 And Nod is a little head;
 And the wooden shoe that sailed the skies
 Is a wee one's trundle-bed.
 So shut your eyes while Mother sings
 Of wonderful sights that be,
 And you shall see the beautiful things
 As you rock in the misty sea
 Where the old shoe rocked the fisher-
 men three,
 Wynken,
 Blynken, and Nod.

THE SINGER

This is how John Addington Symonds sees the poet—not necessarily the individual man, but the poet who reappears in mankind and, in age after age, interprets afresh to the race the truths that purify life and make it beautiful.

HE fills the world with his singing,
 High notes of the heavenly morn,
 For ever and ever ringing
 As age after age is born.

And then he is still, and we know not
 Whither his thoughts have fled;
 Only the clear notes flow not,
 And we say the singer is dead.

But the nightingales that he cherished,
 They carol and cannot die;
 Though the man whom we loved hath
 perished,
 His melody throbs for aye.

PIGGY WIGGY WEE



Bil - ly Prin-gle had a lit-tle pig, When it was young it wasn't ve-ry big,

When it was old it lived in clo-ver, Now it's dead and that's all o-ver. Bil-ly Prin-gle

he lay down & died, Bet - ty Prin-gle she lay down & cried. So there was an end of

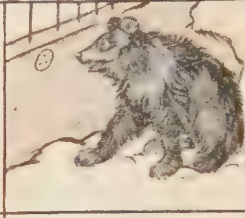
one, two, three: Bil-ly Prin-gle he, Bet-ty Prin-gle she, and the pig-gy wig-gy wee.



A'S FOR THE ANTELOPE



A'S FOR THE ANTELOPE
ALWAYS ON VIEW,
WHICH ALGERNON
SAW
WHEN HE WENT
TO THE ZOO

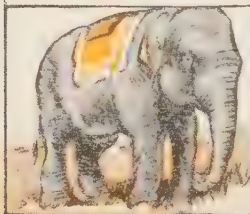


B WAS THE BEAR
THAT
CAME UP AT A
RUN
WHEN BENJAMIN
THREW HIM
A VERY NICE BUN

C'S FOR THE CAMEL:
"POOR THING,
WHAT A LUMP!"
WAS WHAT CARO-
LINE SAID
WHEN SHE LOOKED
AT HIS HUMP



D'S FOR THE DEER
WITH THE SOFT,
PRETTY EYES;
DORIS FOUND THEM
SO TAME
SHE HAD QUITE A
SURPRISE



E WAS THE ELE-
PHANT;
SIXPENCE A RIDE
BUT ERIC SOON
FOUND
THAT YOU CAN'T
SIT ASTRIDE!

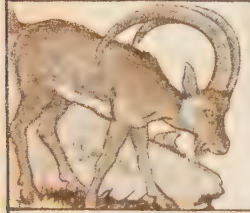


F WAS THE FOX,
VERY CRAFTY
AND SLY,
WATCHING FRANK
FROM HIS DEN
WITH A CUNNING
OLD EYE

G'S THE GIRAFFE
WHICH MADE
GERALDINE SMILE;
SHE WAS SURE WITH
HIS NECK
SHE COULD SEE
QUITE A MILE



H WAS THE HIPPO
ASLEEP IN HIS
POOL.
HARRY THOUGHT IT
AN EXCELLENT
WAY TO KEEP
COOL



I WAS THE IBEX,
A KIND OF WILD
GOAT.
IDA THOUGHT HIS
HORNS NASTY,
BUT LIKED HIS FINE
COAT



J WAS THE JAGUAR,
LIKE A BIG
CAT,
BUT JANE DIDN'T
THINK
SHE WOULD LIKE
HIM TO PAT!

K WAS THE KAN-
GAROO
OFF WITH A BOUND;
A FINE WAY
THOUGHT KEN,
TO GET OVER THE
GROUND



L'S FOR THE LIONS;
THEY MADE SUCH
A FIERCE NOISE
LAURA WISHED SHE
WERE SAFELY
AT HOME WITH THE
BOYS



M'S FOR THE MON-
KEYS,
ALL PATTER AND
CHATTER,
BUT MILES COULDN'T
TELL
WHAT ON EARTH
WAS THE MATTER



N'S FOR THE NILGAI
WHICH JUMPED
OFF A ROCK;
HE TOOK SUCH A LEAP
THAT
NELL HAD QUITE A
SHOCK

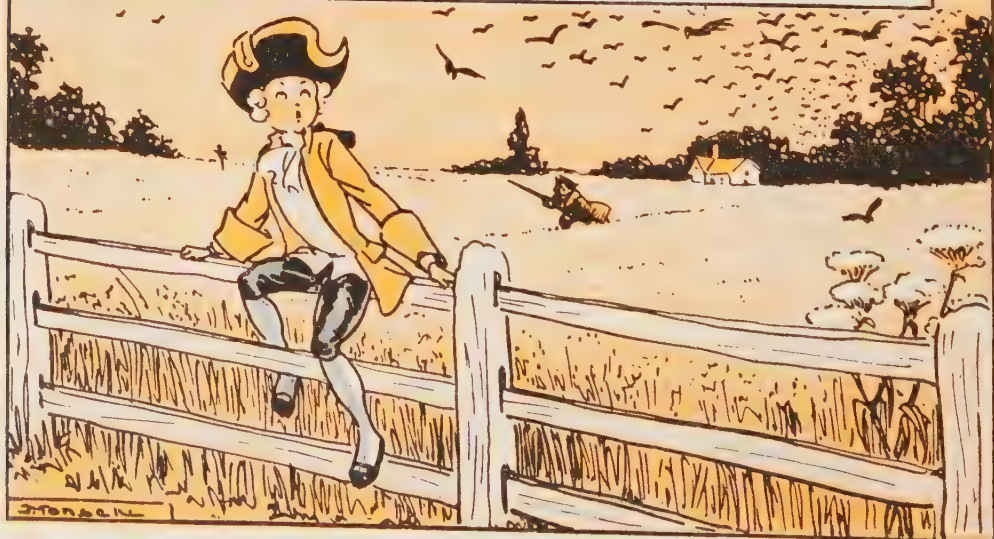
WE SAW AT THE ZOO

O'S FOR THE OSTRICH, A WISE-LOOKING BIRD, BUT OLGA REMEMBERED THE TALES SHE HAD HEARD		P'S FOR THE PARROT THAT HAD LOTS TO SAY; AND TRIED TO PECK PAUL AS HE PASSED BY THAT WAY	
	Q'S FOR THE QUAGGA, WHICH QUENTIN FOUND TAME; HE IS QUITE LIKE A ZEBRA, WITH STRIPES AND A MANE		R IS THE RHINO, A FIERCE-LOOK- ING BEAST; ROSE WATCHED HIM WITH AWE IN THE MIDST OF A FEAST
S IS THE SNAKE WHICH SUZANNE FOUND ASLEEP; HE WAS SHINY AND SLIMY AND MADE HER FLESH CREEP		T'S FOR THE TIGERS THAT GAVE TIM A FRIGHT; HE WAS HORRIBLY SCARED LEST THEY GOT OUT AT NIGHT	
	FOR U (THAT'S THE UNICORN) NOBODY LOOKS; AS UNA CAN TELL YOU, HE'S ONLY IN BOOKS		V'S FOR THE VULTURE, A BIG BIRD OF PREY; VERONICA SAW HIM— AND SOON RAN AWAY!
W'S FOR THE WOLF LYING FLAT ON THE GROUND, THOUGH WHEN WAL- TER CAME NEAR HE WAS UP WITH A BOUND		X JUST LOOKS ON AND HAS NOTH- ING TO DO; THERE'S NO CREATURE THAT CLAIMS HIM THROUGHOUT THE WHOLE ZOO	
	Y IS THE YAK; HE'S WORTHY OF NOTE; YVONNE WAS AMAZED AT HIS LONG SHAGGY COAT		Z'S FOR THE ZEBRA THAT KEPT ZOE BUSY; SHE COUNTED HIS STRIPES TILL SHE FELT SHE WAS DIZZY
			

LITTLE BLACKEY-TOPS

Oh, all you lit - tle black-ey - tops Pray do not eat my
fath - er's crops, While I lie down to take a nap. Shu -
a O! Shu - a O!

The musical score is written in 6/8 time. The melody is in the treble clef, and the accompaniment is in the bass clef. The lyrics are written below the notes. The score consists of three lines of music. The first line has the lyrics 'Oh, all you lit - tle black-ey - tops Pray do not eat my'. The second line has the lyrics 'fath - er's crops, While I lie down to take a nap. Shu -'. The third line has the lyrics 'a O! Shu - a O!'. The music is written in a simple, folk-like style with many eighth and sixteenth notes.



LITTLE MISTRESS MINE

The poet's title for these verses is Villanelle. A villanelle is an artificial form of French poetry with only two rhymes. It consists of nineteen lines, five three-line verses and one four-line verse. One line of the first verse must be repeated in each of the next four verses, and the last verse must repeat two lines of the first verse. Its form is here illustrated perfectly by Edmund Gosse in this villanelle from a dying sparrow to its mistress, who is asked to dig its grave.

LITTLE mistress mine, good-bye !
I have been your sparrow true;
Dig my grave, for I must die.

Waste no tear and heave no sigh;
Life should still be blithe for you;
Little mistress mine, good-bye!

In your garden let me lie,
Underneath the pointed yew
Dig my grave, for I must die.

We have loved the quiet sky
With its tender arch of blue;
Little mistress mine, good-bye !

That I still may feel you nigh,
In your virgin bosom, too,
Dig my grave, for I must die.

Let our garden friends that fly,
Be the mourners, fit and few!
Little mistress mine, good-bye!
Dig my grave, for I must die.

THE THOUGHT

Here is one of the deeper poems of William Brighty Rands. The Thought of Day is what we think of this life. The Thought of Night is what we think of the life beyond.

INTO the skies one summer's day
I sent a little Thought away,
Up to where, in the blue round,
The sun sat shining without sound.

Then my Thought came back to me:
Little Thought, what did you see
In the regions whence you come?
And when I spoke my Thought was dumb.

But she breathed of what was there
In the pure, bright upper air;
And, because my Thought so shone,
I knew she had been shone upon.

Next by night a Thought I sent
Up into the firmament,
When the eager stars were out,
And the still moon shone about.

And my Thought went past the moon,
In between the stars, but soon
Held her breath and durst not stir
For the fear that covered her;
Then she thought, in this demur:

"Dare I look beneath the shade,
Into where the worlds are made;
Where the suns and stars are wrought?
Shall I meet another Thought?"

"Will that other Thought have wings?
Shall I meet strange, heavenly things?
Thought of Thoughts, and Light of
Lights,
Breath of Breaths, and Night of Nights?"

Then my Thought began to hark
In the illuminated dark,
Till the silence, over, under,
Made her heart beat more than thunder.

And my Thought came trembling back,
But with something on her track,
And with something at her side;
Nor till she has lived and died,
Lived and died, and lived again,
Will that awful thing seem plain.

THE VOICELESS

Thomas Gray surmised, in his immortal poem on Stoke Poges churchyard, that some mute, inglorious Milton might perchance rest there. In this poem Oliver Wendell Holmes develops this thought by supposing that many have the experiences that poets express in song. The common failure in expression saddens him. But is there not all the poetry in the world available for those who are themselves voiceless? All the poetry in the world is ours.

WE count the broken lyres that rest
Where the sweet, wailing singers
slumber,

But o'er their silent sister's breast
The wild flowers who will stoop to
number?

A few can touch the magic string,
And noisy Fame is proud to win them:
Alas for those that never sing,
But die with all their music in them!

Nay, grieve not for the dead alone
Whose song has told their hearts' sad
story,

Weep for the voiceless, who have known
The cross without the crown of glory!
Not where Leucadian breezes sweep
O'er Sappho's memory-haunted billow,
But where the glistening night-dews weep
On nameless sorrow's churchyard pillow.

O hearts that break and give no sign,
Save whitening lip and fading tresses,
Till Death pours out his cordial wine
Slow-dropped from Misery's crushing
presses;

If singing breath or echoing chord
To every hidden pang were given,
What endless melodies were poured,
As sad as earth, as sweet as heaven!

BOG LOVE

This grimly realistic picture of love on the commonest level is by Shane Leslie, the Irish author and journalist.

WEE Shemus was a misdropt man
Without a shoulder to his back;
He had the way to lift a rann
And throttled rabbits in a sack.

And red-haired Mary whom he wed
Brought him but thirty shillings told;
She had but one eye in her head,
But Shemus counted it for gold.

The two went singing in the hay
Or kissing underneath the sloes,
And where they chanced to pass the day
There was no need to scare the crows.

But now with Mary waked and laid
As decent as she lived and died,
Poor Shemus went to buy a spade
To dig himself a place beside.

TO EXILES

Perhaps no country has sent out so large a proportion of its population to colonise the world as Scotland has, and no country calls her children back at last with a more appealing mutual love. In this poem Neil Munro pictures vividly the Scotland which rears hardy men for the world's work, and calls them home to her strength and beauty when they have succeeded. Known most widely as a novelist, Neil Munro, who died in 1930, was also a true poet.

ARE you not weary in your distant places,
Far, far from Scotland of the mist
and storm,
In drowsy airs, the sun-smite on your
faces,
The days so long and warm?
When all around you lie the strange fields
sleeping,
The dreary woods where no fond
memories roam,
Do not your sad hearts over seas come
leaping
To the highlands and the lowlands of
your Home?

Wild cries the Winter, loud through all
our valleys
The midnights roar, the grey noons
echo back;
About the scalloped coasts the eager
galleys
Beat for kind harbours from horizons
black;
We tread the miry roads, the rain-
drenched heather,
We are the men, we battle, we endure!
God's pity for you people in your weather
Of swooning winds, calm seas, and skies
demure!

Wild cries the Winter, and we walk song-
haunted
Over the hills and by the thundering
falls,
Or where the dirge of a brave past is
chaunted
In dolorous dusk by immemorial walls.
Though rain may beat us and the great
mists blind us,
And lightning rend the pine tree on the
hill,
Yet are we strong, yet shall the morning
find us
Children of tempest all unshaken still.

We wander where the little grey towns
cluster
Deep in the hills, or selvedging the sea,
By farm lands lone, by woods where wild-
fowl muster
To shelter from the day's inclemency;
And night will come, and then far through
the darkling
A light will shine out in the sounding
glen,
And it will mind us of some fond eye's
sparkling
And we'll be happy then.

Let torrents pour then, let the great winds
rally,
Snow-silence fall or lightning blast the
pine;
That light of Home shines warmly in the
valley,
And, exiled son of Scotland, it is thine.
Far have you wandered over seas of
longing,
And now you drowse, and now you well
may weep,
When all the recollections come a-thronging
Of this old country where your fathers
sleep.

They sleep, but still the hearth is warmly
glowing
While the wild Winter blusters round
their land;
That light of Home, the wind so bitter
blowing—
Look, look and listen, do you under-
stand?
Love, strength, and tempest—oh, come
back and share them!
Here is the cottage, here the open door;
Fond are our hearts although we do not
bare them;
They're yours, and you are ours for
evermore.

LITTLE VERSES FOR VERY LITTLE PEOPLE

Hey diddle, dinkety, poppety, pet,
The merchants of London they wear
scarlet;
Silk in the collar and gold in the hem,
So merrily march the merchantmen.



□ □
LITTLE Robin Redbreast
Sat upon a rail;
Niddle naddle went his head
Wiggle waggle went his tail.

□ □
ONCE I saw a little bird
Come hop, hop, hop;
And I cried, Little bird,
Will you stop, stop, stop?
I was going to the window
To say How do you do?
But he shook his little tail,
And away he flew.

□ □
CUCKOO, cuckoo, cherry tree,
Catch a bird and give it me;
Let the tree be high or low,
Let it hail or rain or snow.

□ □
OATS and beans and barley grow
For you and me, as all of us know.
Thus the farmer sows his seeds,
Thus he stands and takes his ease;
Stamps his foot and slaps his hand,
And turns him round to view his land.



□ □
ORARE Harry Parry,
When will you marry?
When apples and pears are ripe.
I'll come to your wedding
Without any bidding,
And dance and sing all night.

□ □
PIT, pat, well-a-day,
Little Robin flew away;
Where can little Robin be?
Gone into the cherry tree.



□ □
TOMMY TROT, a man of law,
Sold his bed and lay upon
straw;
Sold the straw and slept on grass,
To buy his wife a looking-glass.

□ □
IF I had money I'd buy a clown;
If I had a horse I'd ride to town;
If I had a ship I'd Westward Ho,
And if I was sick I wouldn't go.

IF Candlemas Day be bright and fair
Winter will have another flight;
If on Candlemas Day be shower and rain
Winter is gone and will not come again.

□ □
A, B, C, and D,
Pray, playmates, agree.
E, F, and G,
Well, so it shall be.
J, K, and L,
In peace we will dwell.
M, N, and O,
To play let us go.
P, Q, R, and S,
Love may we possess.
W, X, and Y
Will not quarrel or die.
Z and Ampersand
Go to school at command.



□ □
LITTLE Betty Blue
Lost a holiday shoe;
What can little Betty do?
Give her another
To match the other,
And then she may walk out in two.



□ □
RIDE, baby, ride !
Pretty baby shall ride,
And have a little puppy-dog tied to her
side,
And a little pussy-cat tied to the other,
And away she shall ride to see her grand-
mother.

□ □
THERE was an old woman sat spinning,
And that's the first beginning;
She had a calf,
And that's half;
She took it by the tail
And threw it over a wall,
And that's all.

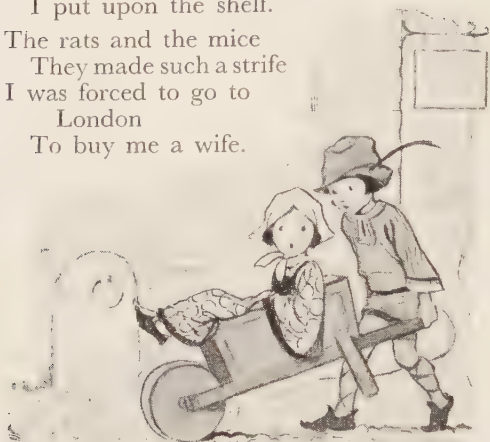
□ □
ONE, two, three,
I love coffee,
Billy loves tea,
How good you be.
One, two, three,
I love coffee
And Billy loves tea.



□ □
ELIZABETH, Elspeth, Betsy and Bess
They all went together to seek a
bird's nest;
They found a bird's nest with five eggs in;
They all took one and left four in.

NURSERY RHYMES

WHEN I was a bachelor
I lived by myself;
And all the bread and cheese I got
I put upon the shelf.
The rats and the mice
They made such a strife
I was forced to go to
London
To buy me a wife.



The streets were so bad,
And the lanes were so narrow,
I was forced to bring my wife home
In a wheelbarrow.

The wheelbarrow broke,
And my wife had a fall.
Down came wheelbarrow,
Little wife, and all.



AWAKE, arise, and rub your eyes,
And hear what time of day;
And when you've done just move your
tongue,
And see what you can say.

SNAIL, snail, come out of your hole,
Or else I will make you as black as
a coal.

TO make your candles last for aye
You maids and wives give ear-o,
To put them out's the only way,
Says honest John Boldero.

OUR saucy boy Dick
Had a nice little stick,
Cut from a hawthorn tree;
And with this pretty stick
He thought he could beat
A boy much bigger than he.

But the boy turned round
And hit him right sound,
Which did so frighten poor Dick
That without more delay
He ran quite away,
And over a hedge he jumped quick.

I HAD a little boy, and his name was
Blue Bell,
I gave him some work and he did it very
well;
I sent him upstairs to pick up a pin,
He stepped in the coal scuttle up to the
chin;
I sent him to the garden to pick some sage,
He tumbled down and fell in a rage.

THERE was a little man, and he had
nought,
And robbers came to rob him;
He crept up to the chimney top,
And then they thought they had him.

But he got down on t'other side,
And then they could not find him;
He ran fourteen miles in fifteen days,
And never looked behind him.

GOOD little boys should never say
'I will' and 'Give me these';
Oh, no! that never is the way,
But 'Mother, if you please.'

And 'If you please' to Sister Anne
Good boys to say are ready;
And 'Yes, sir,' to a gentleman,
And 'Yes, ma'am' to a lady.

I HAVE a little hen, the prettiest ever
seen,
She washed me the dishes and kept the
house clean;
She went to the mill to fetch me some
flour,
She brought it home in less than an hour;
She baked me some bread, brought milk in
a pail,
And sat by the fire and told me a tale.



As Tommy Snooks and Bessy Brooks
Were walking out one Sunday,
Said Tommy Snooks to Bessy Brooks,
Tomorrow will be Monday.

Imperishable Thoughts of Men Enshrined in the Books of the World

Bunyan's Masterpiece

NO book except the Bible has had greater influence for good on the minds of men than *The Pilgrim's Progress*. Written in simple, straightforward English, by a plain, straightforward man, who, from being a poor tinker, became a powerful preacher of God's message to mankind, this immortal story is likely to be read as long as our literature endures. The story is told as an allegory, illustrating the trials that beset a Christian on his way through life, but is better than most allegories, because the characters are so human that we are instantly interested in each for his own sake, as well as anxious to know what happened to them all. John Bunyan, the author, was born at Elstow, near Bedford, in 1628, and died in London in 1688. He was imprisoned for twelve years for preaching without the sanction of the Church, and while in Bedford prison he wrote the first part of his immortal story. Here we take from it certain passages which tell the story in Bunyan's own words.

THE PILGRIM'S PROGRESS

As I walked through the wilderness of this world I lighted on a certain place where was a Den, and I laid me down in that place to sleep, and as I slept I dreamed a dream.

I dreamed, and behold I saw a man clothed with rags, standing in a certain place, with his face from his own house, a book in his hand, and a great burden upon his back. I looked, and saw him open the book and read therein; and as he read he wept and trembled, and at length brake out with a lamentable cry, saying: "What shall I do?"

In this plight he went home and told his wife that he was informed that their city would be burned with fire from heaven, in which fearful overthrow himself, his wife, and his sweet babes, would miserably come to ruin, except some way of escape could be found. His relations tried, without avail, to rid him of his fears.

Now, I saw upon a time when Christian (for this was the man's name) was walking in the fields that he was reading in his book; and as he read he burst out as before, crying: "What shall I do to be saved?" I looked then and saw a man named Evangelist coming to him, who asked: "Wherefore dost thou cry?"

When he had answered, Evangelist said: "If this be thy condition, why standest thou still?"

"Because I know not whither to go," he answered.

Then Evangelist gave him a parchment roll, and there was written thereon: "Flee from the wrath to come." The man read it, and, looking upon Evangelist carefully, said: "Whither must I fly?"

Then said Evangelist, pointing with his finger over a very wide field: "Do you see yonder wicket-gate?" The man said: "No." Then said the other: "Do you see yonder shining light?" He said "I think I do." Then said Evangelist: "Keep that light in your eye and go up directly thereto, so shalt thou see the gate, at which, when thou knockest, it shall be told thee what thou shalt do."

So I saw in my dream that the man began to run. Now, he had not run far from his own door, but his wife and children and neighbours, perceiving it, cried after him to return. But the man ran towards the middle of the plain.

Two of his neighbours, Obstinate and Pliable, resolved to fetch him back by force. When they came up with him he told them that if they died in the City of Destruction, where he and they were born, they would sink lower than the grave.

They talked together, and Christian asked them to read in his book. Obstinate cried: "Away with your book! Will you go back with us or no?"

"No, not I," said Christian, "because I have laid my hand to the plough."

Obstinate then went back, but Pliable offered to go with Christian, and even urged him to mend his pace. But Christian had a burden on his back, and Pliable was unencumbered.

Now, I saw in my dream that, just as they had ended this talk, they drew very near to a very miry slough, and, being heedless, they did both fall suddenly into the bog. The name of the slough was Despond. And Christian, because of the burden that was on his back, began to sink in the mire. Then said Pliable: "Ah, neighbour Christian, where are you now?"

"Truly," said Christian, "I do not know."

At this Pliable began to be offended, and angrily said to his fellow: "Is this the happiness of which you have told me all this while? May I get out again with my life, you shall possess the brave country alone for me."

And with that he gave a desperate struggle and got out of the mire on that side of the slough which was next to his own house, and Christian saw him no more.

Christian, left to tumble in the Slough of Despond alone, endeavoured to struggle to that side that was next to the wicket-gate; which he did, but could not get out because of the burden that was upon his back. But I beheld in my dream that a man came to him whose name was Help, and set him upon sound ground.

Now, as Christian was walking solitarily by himself, he was met by Mr. Worldly Wiseman, who advised him that he could get rid of his burden much more easily by applying to one Legality, whose house was on a high hill he pointed out. So Christian turned out of his way to go to Mr. Legality's. But the hill seemed so high, and that side of it which was next to the wayside did hang so much over, that Christian was afraid to venture farther. His burden seemed heavier, and flashes of fire came out of the hill that made him afraid that he should be burned.

In this way he was found by Evangelist, and once more set on the right path; and so, in process of time, he got up to the wicket-gate. The gate was opened to him by Goodwill, who, after hearing his

story, asked him to look before him at a narrow way. "That," said Goodwill, "is the way thou must go."

"But," said Christian, "are there no turnings or windings by which a stranger may lose his way?"

"Yes," said the other, "there are many ways butt down on this, and they are crooked and wide. But thus thou mayest know the right from the wrong, the right only being straight and narrow."

Then Christian went on till he came to the house of the Interpreter. After he had knocked and the door had been opened, I saw in my dream that the Interpreter showed him a picture of the man whom the Lord of the place whither he was going had authorised to be his guide, and other things such as would help him in his journey. When the Interpreter had shown him many strange and wonderful sights and expounded their meaning, and offered him good counsel, he gave him his blessing, and Christian went on his way.

Now, I saw that the highway up which he had to go was fenced on either side with a wall, called Salvation. Up this way, therefore, did burdened Christian run, but not without great difficulty, because of the load on his back. He ran till he came to a place somewhat ascending, and upon that place stood a cross, and a little below, in the bottom, a sepulchre. So I saw in my dream, just as Christian came up with the cross, his burden loosed from off his shoulders, and fell from off his back, and began to tumble, and so continued to do till it came to the mouth of the sepulchre, where it fell in and Christian saw it no more.

Then was Christian glad and light-some, and stood awhile to look and wonder, till the springs that were in his head sent the waters down his cheeks. As he stood looking and weeping for gladness, behold three Shining Ones came to him and saluted him with: "Peace be to thee." The first said to him: "Thy sins be forgiven thee"; the second stripped him of his rags, and clothed him with change of raiment; the third also set a mark on his forehead, and gave him a roll with a seal upon it, bidding him look on it as he ran, and that he should give it in at the Celestial Gate. So they went their way, and Christian gave three leaps for joy and went on, singing.

CHRISTIAN'S FIGHT WITH APOLLYON

While resting on the hill called Difficulty, Christian fell into a deep sleep. And as he slept his roll dropped from his hand. At the summit of the hill he met two men, named Timorous and Mistrust. They said they were returning, because the farther they went the more dangers they met with.

This caused Christian to feel in his bosom for his roll, that he might read therein and be comforted. But, finding it not, he went down the hill again to the arbour, where he had slept. Who can tell how joyful this man was when he had gotten his roll again, which was to be his pass into the Celestial City? How nimbly did he now go up the hill!

But before he got up, the sun went down upon him and he thought of the lions in the way, of which Timorous and Mistrust had told him. But while he was blaming himself for sleeping, he lifted up his eyes and saw before him a stately palace, the name of which was Beautiful. So he made haste that, if possible, he might get lodging there.

Before he had gone far he entered a very narrow passage, about a furlong off the porter's lodge, and espied two lions in the way. The lions were chained, but he saw not the chains, and was afraid. But the porter, whose name was Watchful, called out to him to keep in the midst of the path, if his faith was strong enough. This Christian did, and so entered the Palace Beautiful, which was built for the relief and security of pilgrims.

There came forth to meet him a beautiful damsel called Discretion, who, on learning his story, called out Piety, Prudence, and Charity. Thus was Christian welcomed into the house.

Here he had much profitable discourse, such as he had had at the Interpreter's house. After supper, Christian was given a large upper chamber, and here he slept.

Before he left this place, the rarities of which were shown to him, he was taken up on to the roof, whence he beheld at a great distance a most pleasant mountainous country. The mountains were the Delectable Mountains, and the country was Emmanuel's Land, from which he was told he would be able to see the gate of the Celestial City.

Christian was now anxious to be setting forward, but before letting him go his hosts took him into the armoury, where

they harnessed him from head to foot, except upon his back, with what was proof against attack, lest perhaps he should meet with assaults on the way. At the gate he learned from the porter that one Faithful, a fellow-townsmen, had passed that way. Oh! said Christian, I know him; he is my near neighbour. How far do you think he may be before? The porter answered that he must have got by this time below the hill.

Then he began to go forward, but Discretion, Piety, Charity, and Prudence accompanied him to the foot of the hill, which led to the Valley of Humiliation. Christian went down very warily, for the hill was dangerous, yet he had a slip or two. When all were at the foot of the hill, his good companions gave Christian a loaf of bread, a bottle of wine, and a cluster of raisins; and then he went on his way. But poor Christian had gone only a little way in the valley before he espied a foul fiend, hideous to behold, coming to meet him, and dispute his passage.

The name of the fiend was Apollyon. Christian was at first afraid, and began to cast in his mind whether to go back or stand his ground. But as he had no armour on his back, he thought that to turn might give the enemy the greater advantage to pierce him with his darts. So he went on, and Apollyon, when he refused to go back, straddled quite across the path and hurled a flaming dart at Christian's breast. Thus began a sore combat that lasted for over half a day.

When Christian had been wounded in head, hand, and foot, and was almost spent, Apollyon came to close quarters, and, wrestling with him, gave him a dreadful fall, so that his sword flew out of his hand. Then said Apollyon: "I am sure of thee now." And with that he almost pressed him to death. But while Apollyon was fetching of his last blow, Christian nimbly stretched out his hand and, regaining his sword, gave the fiend such a thrust that he spread his dragon's wings and sped him away. Then there came to Christian a hand with some of the leaves of the Tree of Life, which Christian took, and applied to his wounds, and was healed immediately. He also sat down, and, after being refreshed, resumed his journey, with his sword drawn in his hand, but he saw no more of Apollyon.

THE FATE OF FAITHFUL

Now, at the end of the Valley of Humiliation was another, called the Valley of the Shadow of Death. And Christian must needs go through it, because the way to the Celestial City lay through the midst of it. The pathway was extremely narrow. On the right hand was a very deep ditch. On the left hand was a very dangerous quag. Besides, the darkness was so great that Christian could hardly tell where, or on what, in going forward he should next set his foot.

About the midst of this valley, and near the wayside, was the mouth of the Underworld. Ever and anon flame and smoke would come forth with hideous noises. Christian heard doleful voices, and fiends came towards him. Near the burning pit one of the fiends came up softly to him, and whisperingly suggested many bad thoughts which he verily believed proceeded from his own mind.

When Christian had travelled in this disconsolate condition some considerable time, he thought he heard the voice of a man, as going before him, saying: "Though I walk through the Valley of the Shadow of Death, I will fear no evil, for Thou art with me." Then he was glad, because he gathered that some who feared God were in this valley as well as himself.

Now, as Christian went on his way he came to a little ascent, which was cast up on purpose that pilgrims might see before them. Up there Christian, looking forward, saw before him Faithful, his fellow townsman, of whom he had heard from the porter at the Palace Beautiful. Then said Christian aloud: "Ho, ho, soho! stay, and I will be thy companion!"

Then I saw in my dream that they went very lovingly on together, and had sweet discourse of all the things that had befallen them in their pilgrimage, and of what had happened in the City of Destruction after Christian had left.

When they were got out of the wilderness, they presently saw a town before them, and the name of that town is Vanity. And at the town there is a fair kept, called Vanity Fair; it is kept all the year long. Almost five thousand years ago there were pilgrims walking to the Celestial City, and Beelzebub, Apollyon, and Legion, with their companions in evil, perceiving that the pilgrim's way to that city lay through this town of Vanity, contrived

here to set up a fair, wherein should be sold all sorts of vanity.

As Christian and Faithful entered into Vanity Fair, the people wondered at their apparel and at their speech. The town itself was in a hubbub about them. That which did not a little amuse the merchandisers was that these pilgrims set very light by all their wares. They cared not so much as to look upon them, and when asked what they would buy answered gravely: "We buy the truth."

The behaviour of Christian and Faithful so little suited the people of Vanity Fair that the pilgrims were taken and examined, and those that examined them did not believe them to be any other than mad, or else such as came to put all things into a confusion in the fair. Therefore they took them and beat them, and besmeared them with dirt, and then put them into the cage, that they might be a spectacle to all.

Then some of the men in the Fair, that were more observing than the rest, seeing the patience of Christian and Faithful, began to check and blame the baser sort for their treatment of the pilgrims. Thus, after words had passed on both sides, the disputants fell to blows.

Then were these two poor men brought before their examiners again, charged with causing the hubbub, beaten, loaded with irons, led in chains up and down the Fair as an example and terror to others, and with threats remanded again to the cage.

A convenient time being appointed, they were next brought before Lord Hategood for trial. They were charged with injuring the trade of the town, and with causing commotions by winning a party to their most dangerous opinions. Evidence against Faithful was given by Mr. Envy, Mr. Superstition, and Mr. Pickthank, and, the jury finding him guilty, he was sentenced to the most cruel death that could be invented. They therefore brought him out, scourged him, buffeted him, stoned him, pricked him with their swords, and finally burned him to ashes at the stake. But a chariot and horses waited for him, and took him up through the clouds to the celestial gate.

As for Christian, he was taken back to prison, where he remained for a space, but He that overrules all things so wrought it about that Christian escaped them and went his way.

CAPTIVES IN DOUBTING CASTLE

Now, I saw in my dream that Christian went not forth from Vanity Fair alone, for there was one whose name was Hopeful—being made so by the beholding of Christian and Faithful in their words and behaviour in their sufferings at the Fair. This man joined himself unto him and, entering into a brotherly covenant, told him that he would be his companion.

Having passed over the little plain called Ease, and refused the invitation of one Demas that they should leave the narrow way to look at the silver-mine on the hill called Lucre, they came to a stile leading into Bypath Meadow.

The road that they had come by was very rough, and Christian, looking over the stile, saw that a path led along by the way on the other side of the fence.

"Here is the easiest going," said Christian. "Come, good Hopeful, and let us go over!"

"But how if this path should lead us out of the way?" said Hopeful.

Christian remarking that it went along by the wayside, Hopeful was persuaded, and the two went over the stile, and found the path very easy for their feet. Presently the night came on, and it grew very dark; then it began to rain and thunder and lighten in a very dreadful manner. They saw they had lost their way, and Christian began to blame himself for bringing his companion out of the way.

But Hopeful comforted him and forgave him, and presently they were at rivalry as to who should go first, and so meet any danger that might lie in wait for them on the way back to the stile. By this time the waters were greatly risen, and the way was perilous. At last, lighting under a little shelter, after having been nearly drowned nine or ten times, they decided to rest there till daybreak. But, being weary, they fell asleep.

Now, near where they lay was a castle called Doubting Castle, the owner whereof was Giant Despair; and it was in his grounds that they were sleeping. And he, getting up early, saw them, bade them awake, and, driving them before him, put them into a dark and stinking dungeon of his castle, where they lay from Wednesday morning till Saturday night.

On the Thursday, acting on the counsel of his wife Diffidence, Giant Despair got a crab-tree cudgel, wherewith he beat

them fearfully. On the next morning, again on the advice of his wife, he came to them and advised them to make away with themselves. And when they prayed him to let them go, he rushed upon them, and had doubtless made an end of them himself, but that he fell into one of his fits—for he sometimes, in sunshiny weather, fell into fits—and lost for a time the use of his hand.

Towards evening the Giant went down into the dungeon again, and finding that they were still alive, fell into a rage and threatened them so dreadfully that Christian's courage began to fail. But Hopeful comforted him by reminding him of the victory he had had over Apollyon, and how he had come through the Valley of the Shadow of Death.

On Saturday morning, the Giant, having had further counsel with his wife, had the prisoners into the castle yard, and, after showing them the bones and skulls of those he had already despatched, told them he would tear them into pieces within ten days. With that he beat them all the way back to the dungeon.

That night the Giant and his wife began to renew their talk about their prisoners; and the Giant wondered that he could neither by his blows nor his counsel bring them to an end. His wife replied that she feared they lived in hope that someone would come and release them, or that they had picklocks about them. The Giant at this resolved to search them in the morning. But about midnight on the Saturday, Christian and Hopeful began to pray, and a little before day Christian exclaimed:

"What a fool am I thus to lie in a stinking dungeon when I might as well walk at liberty! I have a key in my bosom, called Promise, that will, I am persuaded, open any lock in Doubting Castle."

And he pulled it out. It opened the dungeon door, the outward door, and the iron gate.

The gate as it opened made such a creaking that it waked Giant Despair, who, hastily rising to pursue his prisoners, felt his limbs fail; for his fits took him again, so that he could by no means go after them. Then they went on, and came to the King's highway, and so were safe at last.

THE END OF THE PILGRIM'S JOURNEY

Christian and Hopeful afterwards came to the Delectable Mountains. Here they were welcomed by the shepherds. The shepherds, whose names were Knowledge, Experience, Watchful, and Sincere, had them to their tents and gave them good counsel as to their way, and showed them through their perspective glass the gates of the Celestial City.

So they went on, and behold a man, black of flesh but covered with a very light robe, came to them, and, learning that they were bound to the Celestial City, bade them follow him, for it was thither, he said, that he was going.

Now, the name of this man was Flatterer, and by-and-by, before they were aware, he led them both within the compass of a net. Taken in their distress they remembered the shepherds had warned them of the man.

At last they espied a Shining One coming towards them, with a whip of small cords in his hand. When the Shining One was told that they were poor pilgrims going to Zion, he rent the net, put them in the way again, and, having chastised them, bade them go on and remember the other warnings of the shepherds.

They went on till they came into a certain country, whose air tended to make one drowsy if he came a stranger into it. Hopeful was for falling asleep, but Christian remembered that this must be the Enchanted Ground, of which they had been warned. And so, to prevent themselves from falling into a sleep from which there was no awakening, they fell to good discourse.

In time they were got over the Enchanted Ground, and entered into the country of Beulah, whose air was very sweet and pleasant. The way lying directly through this country, they solaced themselves there for a season. Here they heard continually the singing of birds, and saw every day the flowers appear in the earth, and heard the voice of the turtle-dove in the land. In this country the sun shineth night and day; wherefore this was beyond the Valley of the Shadow of Death, and also out of the reach of Giant Despair, neither from this place could they so much as see Doubting Castle. Here they were within sight of the city they were going to,

also here the pilgrims were met by some of the inhabitants thereof.

As they went they were met by two men in raiment that shone like gold, also their faces shone as the light. These men asked the pilgrims whence they came; and they told them. Then said the men: "You have but two difficulties more to meet with, and then you are in the city." Christian, then, and his companion asked the men to go along with them; and they said they would. So they went on together until they came within sight of the gate. But betwixt them and the gate was a river, and there was no bridge to go over. The river was very deep.

The men that were with them, in answer to their questions, told them that they must go through the river, which they would find deeper or shallower as they believed in the King of the place. They then entered the water, and Christian began to sink, crying out to his good friend Hopeful: "I sink in deep waters; the billows go over my head."

Then Hopeful bade him be of good cheer, and had much ado to keep his brother's head above water. But after a while they both took courage, and Christian presently found ground to stand upon, and so it followed that the rest of the river was but shallow. Thus, they got over.

Now, upon the bank of the river, on the other side, they saw the two Shining Ones, who there waited for them. Wherefore, being come out of the river, they saluted them, saying: "We are ministering spirits, sent forth to minister for those that shall be heirs of salvation."

Now, you must note that the city stood upon a mighty hill, but the pilgrims went up that hill with ease, because they had these two men to lead them up by the arms. They had likewise left their mortal garments behind them in the river.

And I saw in my dream that Christian and Hopeful, after giving in their certificates, went in at the gate; and lo, as they entered, they were transfigured, and they had raiment put on that shone like gold. There were also those that met them with harps and crowns, and gave these to them. Then I heard in my dream that all the bells in the city rang again for joy, and that it was said to them: "Enter ye into the joy of our Lord."

The Story of the Most Beautiful Book in the World



THE TWELVE

THE twelve humble men who walked with Jesus in Palestine would have been astounded if someone had prophesied to them that they would change the history of the world, and for thousands of years would remain the most interesting group of men in the books and languages of all nations.

They did not realise how near they were to the supreme mystery of life. At the arrest of their Master they forsook him and fled. It was not until after his death that they realised the divine majesty of him with whom they had lived.

And even then they did not see the whole truth of their destiny. They thought the end of the world was at hand. They believed that Christ would appear in the heavens before their generation had passed away. They remained in Jerusalem waiting for his coming. It was beyond their imagination to realise that out of their simple lives, out of their own simple story of the Master, would come the great revolution of Christianity. How interested we are to look back on these men! They actually lived, day after day, in the society of Jesus. They heard his voice, they looked into his eyes, they walked at his side, they sat with him at meals, they touched him with their hands, they knew his ways, his every habit.

Ah, if they had only realised, as we know by experience, the long road that

Christ's religion had to travel, would they not have told us more of the Master, and filled whole books with their memories of his life on Earth? Not one of them, it seems, considered how it would be when they were dead, and there was left on Earth no one alive who knew Jesus.

Among this little group of men none is so interesting to us as that disciple whom Jesus loved—the beloved disciple, as he has ever since been called—the fisherman's son, John. He was the disciple who was nearest to Jesus.

The father of the beloved disciple was a well-to-do Galilean fisherman named Zebedee, able to hire servants and to live in some ease. James and John, his two sons, probably received some education in their boyhood, and certainly from their mother, the pious Salome, they must early and all through life have gained the chiefest impulse of all education, a desire to live closely with God.

They were strong, healthy, thoughtful youths; they understood the seamanship of their day and country; they could face hardship, and were inured to danger; they earned their living as fishermen, but did not think that living ended there; they were conscious of God and the mystery of Life.

So far as we can gather, John was sufficiently reflective to feel that the priests of his religion were far from the secret mystery of the human heart. It

GREAT FIGURES OF THE OLD TESTAMENT · THE LIFE OF JESUS

seems that early in his life he went to hear the extraordinary preaching of the hermit of Jordan, who cried aloud for repentance, and who baptised his converts into a new and deeper form of life. It is easy to imagine how James and John talked together in their ship about the mystery of life and the problems of their nation.

We can see how the preaching of John the Baptist, with its reality, its fierce passion, and its splendid vigour, must have appealed to these young men. Perhaps the refined disposition of John felt that there was some difficulty about following the Baptist; but his hunger and thirst after reality in the spiritual life made him at last a disciple of this new prophet. Many follow a leader in whom they do not see all they desire to see, because they can find no higher, and are themselves incapable of leading men.

JESUS CALLS JOHN TO HIMSELF AND TEACHES HIM THE SECRET OF LIFE

It was while the fisherman John was listening to John the Baptist at Bethany that Jesus found him, and called this son of Zebedee to follow him. The first step had been made when John sought the Baptist rather than the rabbis; the second step was when he left the thunders of the Baptist for the love of Jesus.

Henceforth the road was clear before his eyes. The secret of life was discovered. Instead of thinking about sin and wrath and judgment, he thought of love. He saw that the heart is at rest when it answers the Father's love with a son's yearning. Intimately, then, he was able to enter into the idea of Jesus, destined to shake the world and transform the whole orb of human life. If we open our Bible at the First Epistle of John, and read it over quietly by ourselves, we shall see how wonderfully this Galilean fisherman entered into the true spirit of Jesus.

When we read these immortal simplicities, so tender, so overflowing with solicitude, do we not realise how close and how dear a companion to the Master must have been the man who wrote them?

It is the spirit of the whole Bible that has given light and joy and freedom to mankind; and it is the spirit of the Gospel according to John which shows us how intimately, and with what perfect insight, the beloved disciple understood the heart of his Master.

Mark was a man who observed; John

was a man who perceived. In the Gospel according to Mark—the earliest, the simplest, the most picturesque, and in some ways the most useful of all our documents—we have a wonderful *narrative*, written by a man who saw the value of details, had an eye for the picturesque, and stated all the essential things he said and saw.

THE WRITINGS OF JOHN THAT REVEAL TO US THE SECRET OF THE MASTER

In the Gospel according to John we have the document of a man who perceived the meaning, the inner significance, the spiritual mystery of all he saw and heard.

If we read the good tidings according to John, we shall see how the writer had entered into the secret of his Master. It is the Gospel of love.

These things have I spoken unto you (he heard Jesus say) that my joy might remain in you, and that your joy might be full. This is my commandment, That ye love one another, as I have loved you. Greater love hath no man than this, that a man lay down his life for his friends. Ye are my friends, if ye do whatsoever I command you.

And again:

A new commandment I give unto you, That ye love one another; as I have loved you, that ye also love one another. By this shall all men know that ye are my disciples, if ye have love one to another.

JOHN'S VISION OF JESUS AS THE LIGHT OF THE WORLD

And how wonderful and illuminating is this record by John of our Saviour's words:

I am come a light into the world, that whosoever believeth in me should not abide in darkness. And if any man hear my words, and believe not, I judge him not; for I came not to judge the world, but to save the world.

No other disciple perceived so surely as John that without the idea of Jesus, that is to say, the Fatherhood of God, the Brotherhood of Man, and Love as the laws of the universe, life was a darkness. John saw, as no other saw, that Christ was a Light; John felt, as no other felt, that this Light was warm and gladdening, and full of comfort. Among the friends who walked with Jesus in Galilee almost every character of humanity is represented, and through them every conceivable idea of Jesus has been presented to the world. But it is to the beloved disciple that we owe chiefly the true, and therefore the most victorious, idea of Jesus, namely, the

Jesus of Love—the Love given to make men happy, the Light shining that men might no longer walk in the darkness.

Because John loved he was beloved, and because he loved he understood. We can never understand any person deeply and satisfactorily unless we love. John loved Jesus, and he understood the spiritual mystery of his Master's teaching. Through him has shone down the ages the pure light of the love and mercy of the Master.

THE LAST MAN ON EARTH WHO HAD SEEN AND KNOWN JESUS

We know little of his long life. It is certain that he remained at Jerusalem for some time after the Resurrection. We also know that he was put in prison, and that he was sent as a missionary.

It is thought that he presently retired to Ephesus, and it seems that many people flocked to him for instruction. There was some idea, apparently, that he would never die, that Jesus would come again with power and great glory before death touched the disciple of love, and therefore John must have been eagerly sought by those who believed in Jesus.

He lived to be a very old man, outliving, we imagine, all his companions, and he remained for many years on Earth, the last man who had known Jesus.

Legends of many kinds sprang up around his memory, but we are not interested in them. If he was miraculously delivered from torture and death, it makes no difference to our ideas concerning him. What interests us, and holds all our wonder and affection, is that this fisherman alone among the Twelve penetrated to the secret of Jesus, and that through him we have received the idea of Love. He was beloved by Jesus; he has been beloved by men and women all over the world for nearly two thousand years; he will always be loved by those who have the great secret of Love in their lives.

THE LITTLE BAND OF TWELVE WHO WALKED WITH JESUS

When we look back into the documents of the past there is little, all too little, to be learned of this little band of men who walked with Jesus and revolutionised the world. We have looked at John; let us see what we can learn of the others.

On that day when Jesus came to John the Baptist, there was listening to the preacher of the wilderness a young fisherman named Andrew.

He was born in Bethsaida, in Galilee, and he earned his living with a brother named Simon Peter, sharing a house with him at Capernaum. It seems that his disposition was religious, that he was discontented with the formal religion of the priests, that he felt a desire for some deeper and more spiritual communion with the great God who had created Heaven and Earth. As he stood listening to John he saw Jesus approach, saw him present himself for baptism, and heard the Baptist pronounce words of special blessing on the Young Carpenter. When he went home he narrated the incident to his brother, and Simon Peter heard the tale with interest. Perhaps they discussed the matter as they mended their nets, or as they fished together under the stars on the Sea of Galilee. Their partners, James and John, must have shared these interesting conferences.

THE FISHERMEN WHO LEFT THEIR NETS TO BECOME FISHERS OF MEN

Some time passed, and one day, when they were fishing from the shore, Jesus approached and said: "Follow me, and I will make you fishers of men."

In this one sentence, so quiet and so simple, he flashed upon their conscience the light of eternity. They saw the immense comparison—fishing to earn their own bread, toiling to save others. Their old longing for a fuller life took complete possession of them. "And they straightway left their nets and followed him."

Of the rest of St. Andrew's life we know little, except that he was ever on the fringe of that little inner brotherhood which was so close to Jesus. Peter and James and John were the nearest to Jesus—James and John were brothers—and occasionally Andrew, the brother of Peter, was called into this inner circle. It is said that Andrew went as an apostle to many foreign countries; legend ascribes to him the working of extraordinary miracles. There was a gospel called *The Acts of Andrew*, but it was not accepted by the Church, and now it has vanished. Tradition declares that he died a martyr's death by crucifixion, on a cross shaped like an X. This is the origin of the St. Andrew's Cross with which we are familiar in the Union Jack.

Among the four fishing partners, the brothers Simon Peter and Andrew, and the brothers James and John, Simon

Peter, by the very force of his character, was the chief. He was marked out during his discipleship for special favour. It was to his home in Capernaum that Jesus resorted, and that humble home came to be spoken of among the brotherhood as "the house," as if it were the very home and centre of the Master's life. Then it was to Peter that Jesus confided the care of the Brotherhood after the Crucifixion.

THE FAILURE OF PETER AND ITS LESSON FOR US ALL

To follow the story of Peter's life as an apostle is to convince oneself of the truth of the Christian religion; nothing could be more human, more real, more honest. If our documents were false, the great struggle between Peter and Paul—on which the history of Christendom depended—would have been hidden or denied. And from Peter's failure—for Peter failed to realise the immensity of the Idea of Jesus—we learn a lesson of great value. We all remember how Peter, when our Lord called him to walk over the water, suddenly doubted and began to sink. Yet, despite Peter's doubts on this occasion, and on the occasion of the casting of the nets, and on that other terrible occasion when he denied his Master, our Lord loved and trusted him. In after life Peter was always true to this trust, and was called a pillar of the Church.

It was said that all his later life Peter spent in repentance of his early faults, and that when he died, each cheek was furrowed deep with the shedding of tears.

IMPULSIVE PETER, THE MOST HUMAN OF ALL THE DISCIPLES

All through the history of Christianity Peter has been dearly loved by the faithful, perhaps because he was so human. His temper was hasty, but he was swift to make amends, and as he grew older the nobility of his character seemed to shine out more and more. He was a great leader among the apostles, and one of his finest characteristics was his humility. There is a legend that at his death he begged his executors not to crucify him in the position in which our Lord had been crucified, and that he was therefore put to death head downward.

Peter, impulsive Peter, was the kind of man we often meet in life, the man who is all courage one moment and all fear the next; always wanting to go forward and always drawing back.

For the rest of his life he was a bold and quite a beautiful preacher of the Fatherhood of God and the Brotherhood of Man. He died gloriously in defence of his faith, perishing on the cross, a willing martyr in the service of the Master whom he adored in his heart, and whose truths he nobly upheld. A more interesting, a more human, a more lovable man was not to be found among the Twelve. We admire the genius of Paul; we give our love to Simon Peter. Of John we read on another page; now we will see what we can learn of the other apostles of Christianity.

James, the brother of John, is one of the interesting group of four who were always close to the heart and counsels of the Master. His devotion is unquestionable. The one unhappy incident in his life is that of the ambitious request that he might sit with his brother John, one on either side of Christ, in the Kingdom of heaven. But who will judge him for such a plea? Surely, in a moment of deep affection, he may have uttered his soul's longing. Love is often responsible for mistakes of judgment. But we know that James was a devoted apostle.

A BEAUTIFUL STORY OF JAMES THE SON OF THUNDER

Jesus named him, with John, "a son of thunder," as if to signify the passionate impetuosity of his nature; and, after the Crucifixion, James occupied a chief place among the Twelve. And when Agrippa determined to punish the followers of Jesus, it was upon James that his vengeance fastened. There is a legend that when the man who accused James heard the apostle's answer before the judges he was filled with remorse, and cried out that he, too, would follow Jesus; and the story tells that, on the way to the place of execution, this accuser, doomed to die with James, pleaded to the apostle for forgiveness; and James, looking earnestly upon him, answered: "Peace be with thee," and kissed him. Thus, says the old legend, died the Son of Thunder, one of the earliest martyrs, one of the most beautiful of all those who loved and followed Jesus.

There is another James among the apostles about whom we cannot be sure of many important facts. Who was James, the son of Alphaeus? We cannot say. Nothing is known of him. According to certain people he is one and the same

with James, "the brother of the Lord," about whom information is scant. After the Crucifixion Jesus appeared to James, and then James afterwards became a pillar of the brotherhood in Jerusalem. One of the stories tells that James the Less was of such dignity and power that the Pharisees hoped to persuade him to denounce Jesus. Instead of denouncing Jesus he confessed himself the servant and apostle of the Lord. So furious were the priests that they seized James then and there, and flung him down, killing him.

Philip lived at Bethsaida, and was one of those who listened to the teaching of John the Baptist. He brought Nathanael to Jesus, and was ever an eager seeker after God. It was Philip who said to the Master: "Lord, show us the Father, and it sufficeth us"; it was Philip to whom Jesus made the great answer: "Have I been so long time with you, and yet hast thou not known me, Philip? He that hath seen me hath seen the Father."

THE MYSTERY OF THE LIFE AND DEATH OF THE APOSTLE WHO DOUBTED

Philip's life as an apostle is utterly unknown. Some say he died without confessing Jesus. Another story tells that he was crucified head downward. Jesus is said to have appeared to him and to have rebuked him for want of meekness. But all these are legends.

Bartholomew was brought to Jesus by Philip, and it is probable that he is the same man as Nathanael. It seems that he became a missionary, and legend says that he was crucified with his head downward in Armenia. All we can be more or less certain about concerning this companion of Philip is that he lived the devoted life of a missionary.

Thomas was a carpenter and builder. He lives for ever as the man who would not believe in Jesus without material proof. He had known Jesus intimately, had served him, questioned him, listened to his teaching; but we read that when he saw the risen Jesus he could not and would not believe that his Master had truly risen. And then the doubting disciple, covered with amazement, exclaimed: "My Lord, and my God!"

Then answered Jesus: "Thomas, because thou hast seen me thou hast believed; blessed are they that have not seen and yet have believed."

After this Thomas carried the good news of Jesus into Parthia and India, and we lose sight of him altogether, going out into the great darkness of the outer world preaching the religion of Jesus.

MATTHEW, THE ONE RICH MAN AMONG THE DISCIPLES

Matthew interests us as, perhaps, the one rich man among the twelve apostles. Matthew the apostle is the same as Levi the publican, and he must have known comfort and luxury, and must have been a hard and avaricious man before the magic of Christ's personality called him to the life of a wandering disciple. Although the Greek and Roman churches call him a martyr, it would seem that he died a natural death.

Simon the Canaanite is supposed to have spread the knowledge of Jesus through Egypt, and to have died the death of a martyr. Some writers believed he preached Christianity in many countries, and even carried it as far as Britain; but this is evidently a confusion of Simon with Simon Peter, the great head of the Brotherhood having been credited with missionary labours all over the Earth.

Thaddeus has left behind no memory of his work. He is merely a name on the page of Holy Writ. We know more of Mary and Martha than we do of this companion of Jesus, chosen, we may be sure, for some good reason, and destined for work of immense importance. It is said that he became a missionary in Edessa, and we may be certain that by his influence the Light of the World streamed through the darkness of paganism.

THE MEN WHO LOST THEMSELVES IN A GREAT LOVE FOR THE MASTER

Nothing is more remarkable in the lives of the apostles than the way in which they all completely submerged themselves in the work of their divine Master. They had one thought only, in which they lost themselves, and this thought was to spread abroad the good news of Jesus.

Matthias, who took the place of Judas Iscariot, has been supposed by many to be the same as Zaccheus and Barnabas.

Such is all we know about the twelve apostles. These twelve men, who revolutionised the world, have left us no definite record of themselves. They lost themselves utterly and gladly in the mystery and joy and triumph of their Master.

THE OLD DANCES OF OLD ENGLAND



1. The Morris Dance called Leap-Frog. Each man does a caper as he comes to the top.



2. Another Morris Dance, The Gallant Hussar, showing the galley, a favourite step, in which the dancer jumps on one foot, and twirls the other.



3. This is a Sword Dance called Ampleforth. The leader is holding up the lock, and the victim in the middle is kneeling down, before being "killed."



4. The Running Set, from Kentucky, showing the promenade, which comes between every figure.

The Interests and Pleasures of Life for All Indoors and Out



The Morris Men of Bampton dancing on the lawn of a country mansion on Whit Monday

THE STORY OF OUR ENGLISH DANCES

IN the early 1900's there began a revival of country dancing, and a great many children learned how to dance the old English country dances which had died out in Britain about a hundred years previously, and had been almost forgotten.

Now in every part of England, at schools, at Girl Guide meetings, and at special classes, we can see children, and grown-ups also, dancing Hey Boys, Goddesses, Gathering Peascods, and many other dances which everybody knew and loved when Shakespeare was a boy. From the days of Henry the Eighth, for two hundred years at least, these country dances were the chief amusement at all times of merry-making, not merely in the country among the common people, but at the King's court too.

But there are other kinds of old English dances as well as the country dances, and, like the country dances, they are called folk dances. This is because they were invented by the peasants themselves, by ploughmen who could not even write their own names, and not by professional musicians or dancers.

Some of these dances have been altogether forgotten, but two kinds, the morris dance and the English sword dance—which is quite different from the Scottish sword dance—were discovered just before they too died out.

These dances are meant to be for men only, though women and boys dance some of them; and they are much more difficult and complicated than the country dances. But

although the country dances are for partners, boys and girls dancing together, and morris and sword dances are not, there are many ways in which they are alike; and they all started in the same way.

People who study old customs and the rites of savages tell us that dances of this kind are to be found in the history of every nation in the world. They were danced in the early times when almost everybody lived by tilling the soil; the success of the crops each year was the most important and necessary thing in their lives.

Before anyone had heard of Christianity, men had strange customs and beliefs, many of which were about the ways of making the gods of the weather send rain and sun at the best times for the corn. They thought it pleased these cruel gods if they killed a man or an animal in their honour; and in the middle of winter, when all the earth seems dead, or in the spring, when the green corn begins to sprout, they had a great ceremony of sacrifice.

Before they killed the victim they always danced, partly to do honour to the gods, partly to excite themselves enough to do the killing—for it was not easy even for a savage to kill a helpless man whom he did not hate or even know. And if it was an animal that they killed, it was a sacred animal that no one must hurt at any other time, for they thought that the gods would be best pleased if they sacrificed something very precious.

CRAFTS · GAMES · NEEDLEWORK · PUZZLES · SCIENCE EXPERIMENTS

When the dancers had killed the animal, they ate part of it, thinking that it would make them specially strong and healthy, because it belonged to the gods.

With the same idea, all the people would make a ring round a sacred tree, in the spring, and would run forward and touch it with their hands, thinking that the hidden strength which made the leaves come out on the tree would thus be given to them.

Now, all this may seem to have very little to do with our English folk dances, and, of course, we no longer believe in these strange customs, and no one remembers what they used to mean. But the maypole, which children dance round on May Day, is only that old sacred tree; and some country dances—Gathering Peascods, for instance—are maypole dances. When the dancers now run into the centre and clap their hands, they would have touched the tree in the days of old. But the survival of these rites can be seen far more easily in the morris and sword dances. In the first place, these dances are still performed only on special occasions, once in a year—on Boxing Day, or May Day, or Whit Monday. They are danced only by a single team of men, specially dressed up.

Above all, in some of the sword dances the “killing” is still done. The dancers each hold a sword in one hand, and grasp another dancer’s sword by its point. Then they make complicated figures by following a leader over or under the swords, and finally, running in a ring, they plait the swords into a shape like a star with a hole in the middle of it. This shape, which is called the lock, or rose, is held up by the “captain” of the dancers, and a man runs into the

middle of the ring and kneels down. Then the lock is dropped over his head, round his neck; the dancers each take hold of a sword, and run round the victim, faster and faster, till at the end of the music they all draw their swords out of the lock, and the “victim” falls down and pretends to be dead.

The morris dances are shorter, more violent, and more difficult in the steps than the sword dances. The men wear bells on their legs, and hold handkerchiefs, or, less often, sticks in their hands. The pictures on page 6792 are of men who have learned to dance morris dances from teachers who have discovered the old dances; but the picture on page 6793 is a photograph of the village dancers of Bampton, in Oxfordshire. These men learned the dances from their fathers, and their fathers in turn from their fathers, and so on back to a time which nobody knows; and every Whit Monday, for about five hundred years, there have been morris dances at Bampton. You can go to see them.

Very few country dances have been danced like this without a break for many years. But there is one country dance, called the Running Set, which has a strange story.

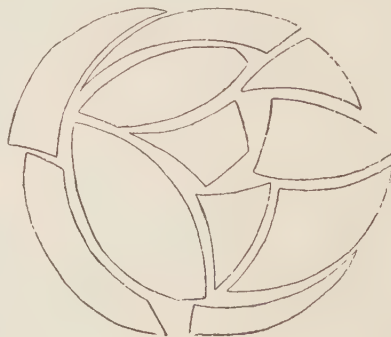
In the middle of North America, in the mountains of Kentucky, many of the people are descendants of English men and women who sailed over to America over three hundred years ago, and they still dance this group of country dances which had quite died out in England. Picture 4 shows a figure in the Running Set being danced by English people who learned from the man who found it in America. So that dance has travelled a good deal, first from England to Kentucky, and then back again across the Atlantic.

THE PUZZLE OF THE BROKEN PLATE

A WEALTHY collector of antiques was horrified one day to hear a terrific crash in the room where the maid was dusting some very valuable china.

Hurrying to see what had happened, she found that the girl had dropped a large and costly plate. It was a piece of perfect porcelain of the richest blue, with no design at all on it, and it had been broken into eleven bits.

The pieces were gathered up and placed on a table, and the owner tried to fit them together. But in gathering them from the floor their order had become mixed, and there was no pattern to act as a guide. For an hour she tried to get them into the right order, but without success.



THE PLATE AS GIVEN TO THE REPAIRER

She therefore decided to stick the pieces in this order on a sheet of cardboard, thus preventing any of them being lost, and to hand them to a dealer in old china, so that he might have the fragments properly arranged and stuck together.

The dealer engaged an expert to do the work, and the plate was restored so that the joins could hardly be seen. How did the expert arrange the pieces to form a perfect plate?

If we put a piece of thin paper over the picture of the fragments given here, trace them off, and then cut them out with scissors, we shall be able to experiment, and arrange them as we wish. The solution is given on page 6924.

THE RIGHT WAY TO SLIDE AND SKATE

SLIDING is, after walking and running, probably the most natural of all physical exercises for a boy, and by teaching the laws of balance, it greatly helps him to learn to skate.

The best place for a slide is a small pond covered with ice stout enough to bear, with a good run on land at each end of the slide. The slide should be across the pond from one side to the other, from sixty to a hundred feet long, and not far off should be a return slide so that players can go over one way and then, leaving the pond, turning round, and taking a short run, slide back over the ice to the starting point.

There is little instruction needed for sliding; experience is the best teacher. The feet should be kept close together and parallel with the line of the slide, the necessary speed and momentum being given by the preliminary run.

Skating cannot, of course, be learned from books, though useful hints may be obtained in this way, and put into practice at home. For strange as it may seem, all skating

can be practised in the house with or without skates. (If skates are worn, the floor must be protected, of course.) By practice at home, it is not meant that we should glide round a room as on a rink, but that we should perform the various skating movements and learn to balance correctly while standing in one spot.

The art of skating successfully and gracefully consists in knowing thoroughly the rules of gravity, or balance. The greatest danger is a fall backwards through the feet slipping away in front, and this is avoided by throwing the weight of the body forward. But as tumbles are bound to come, especially at first, it is wise to learn the right way to fall.

It is a mistake to struggle to regain the balance. This only results in a general tensing-up and the fall becomes a good hard one, causing bad bruises. If we just let ourselves go, relaxing every muscle, we will soon discover that a tumble on the ice is all in the day's fun.

In learning to skate we must dismiss from our minds all notion of walking; we place our feet flat on the ice; there is no toe to heel bending of the foot, and no rising on the toe.

To advance the skates we stand with the heel of the right foot a few inches away from the hollow of the left, and then with the left skate press out against the ice, with the blade

gripping along its length, to thrust the right foot forward. This gives the necessary impetus, and bringing up the left foot parallel with the right we go forward till the force is exhausted. Then we repeat the motion, but with the left foot in front, the push off being given with the right skate.

As we get on we must remember that the great principle of successful skating is to keep only one foot on the ice at a time in a gliding motion.

The weight must be on this gliding foot, and at each stroke is transferred from one foot to the other at the moment when they are side by side. The ankle of the gliding foot should be pushed forward and the knee bent at the beginning of the stroke, there being a gradual straightening up as the other foot comes up for the next stroke.



PRACTICE MAKES SKATING PERFECTION

The stroking foot should leave the ice with an action to the side and back, and should be stretched above and behind the gliding foot, with knee out. This is something we can quite well practise at home, in front of a long mirror, pushing off with one foot

and balancing on the other as if gliding.

All the time our aim should be to keep our skating even. A long stroke with one foot and a short one with the other is bad style and not at all graceful. The stroke should be as long as possible, too. When we have gained confidence and have command over our feet, we may then increase the length of our stroke. For a beginner three to five yards is enough space to cover at each stroke, but good skaters do four times that distance.

The skater should never look at his feet, and his face should always be turned in the direction in which he is going. All movements should be done gracefully without spasmodic effort.

All this time we have been skating on the inside of the skate. The outside edge is used in skating curves, and good practice for this is to place something on the ice, such as a stone, to act as centre to a circle, and then, standing three or four yards away, with our right side toward the stone, and looking over our right shoulder at the stone, to press the outside edge of the right skate firmly into the ice, and with our left skate propel ourselves round the stone, leaning well inward.

After a time we shall be able to lift the left foot off the ice; and we should practise

doing this as long as possible, supporting ourselves on the outside edge of the right skate. Then we should practise the same movements the other way round, pressing the outside edge of the left skate into the ice, and propelling ourselves round with the right.

When skating in the open, we must never attempt to go on ice that is not absolutely safe. If there is the slightest doubt about it, we must keep away.

Many beginners will find the most difficult part of skating is learning to stop, especially

if it is necessary to do so suddenly to avoid another skater. We do this by bringing both feet together and turning the whole body with a quick twist to the side, finishing a right turn on the outside edge of the right skate and the inside edge of the left (in the left turn the positions would be reversed).

In the ordinary way, to slow down we make the skates act as a brake by turning the feet in to the centre in pigeon-toed fashion, at the same time pushing the blades outwards against the ice.

SCENERY FOR YOUR MODEL RAILWAY

WHETHER your train is a clockwork one or a working model you have made yourself, you will get a great deal more pleasure from it if it is set in natural surroundings.

It is worth taking a lot of trouble to get this background right, and before starting to build bridges, banks, tunnels, and platforms, be sure you know the correct scale of your railway, and make everything to that same scale.

Make buildings in cardboard. Cut the four walls in one straight strip, then mark where the corners will come, and with a sharp knife or a razor blade, score down these lines on the *outside* of the building, cutting only part way through the cardboard, which will then bend neatly to shape without breaking. For a small gauge railway, matchboxes stuck together will make houses, sheds, signal boxes, and suchlike.

The larger cardboard models can be covered with dolls'-house papers of brick and slate, which can be bought cheaply at model shops and at some which sell wallpaper. But do not get the kind in which every brick or every slate is exactly alike, or if you do, "weather" it down with a touch of paint here and there. Corrugated cardboard, suitably painted, makes excellent roofs for sheds and farm buildings.

Slate paper on cardboard can well be used for a stone bridge, and a strip of sandpaper will make the road across the bridge.

For an embankment, use slightly crumpled brown paper stuck to a cardboard foundation. It can be painted green or wiped over with glue and, while still wet, sprinkled with sand or fine gravel. Small stones stuck here and there break it up and look like rocks.

For trees, bushes, and small hedges cut

up a cheap sponge or a loofah, and dye the pieces green. Hedges along a road, or between large fields, can be cut from a piece of wood of square section, shaped and dented with a chisel to look as natural as possible, before being painted. Along the top stick a narrow strip of green sponge or loofah, with a few flowers or berries painted on, or better still, made of minute scraps of coloured felt and stuck on. Felt or green baize can be used for a lawn, but should be made rough with a teasel or a wire brush to break up the surface.

Gates and fences can be constructed from used matches stuck together, or pieces of wire soldered. A short length of wooden rod makes a good post. A number of these, spaced a little apart and with small screw-eyes in the top, can be connected by corded string or wire threaded through these screw-eyes, to make fences for large models.

Then you should have, on your stations and beside your track, some advertisements and hoardings, which are such a feature of our main-line railways. Small coloured pictures and reproductions of large advertisements often appear in magazines, on the paper coverings of tins, and on food cartons, and these make good miniature posters.

If you are lucky enough to have a permanent raised track around the walls of a room, a country background can be painted, or be cut out of posters and pasted to the walls, the foreground being matched up to this. A winding stream gives a rural touch, but remember it must be lower than its banks. Paint streaky lines of bluey green on its bed and cover this with plain glass. Then here and there against the banks and in mid-stream, stick a few small stones, and paint white streaks for the eddying waters.

ANSWERS TO PUZZLES ON PAGE 6672

1. America. 2. 54 and 45 miles. 3. Let every man skin his own skunk. 4. Beautify, beatify. 5. A-corn. 6. The young man was the second woman's son. 7. Peace. 8. Bath, Bedford, Dover, Ely, Paris. 9. Peace. 10. *a* Because he cannot get a living without somersaults (some assaults). *b* Bacon. *c* When it

is scaled. *d* When it is Browning. *e* Because he should never sleep on his watch. *f* One gives milk and the other gives way (whey). 11. Chocolate. 12. Few, fewer. 13. Danes, Andes. 14. Grope, rope, ope. 15. Nameless. 16. Bar-net. 17. A Shadow. 18. Idea. 19. Rhine. 20. Fifty.

The Story of Immortal Folk Whose Work Will Never Die



Archimedes



Mencius



Akhnaton

GREAT MEN OF ANTIQUITY

EACH generation is inclined to think it is wiser than all that have gone before, and in some respects the claim can be made good. But the more we know of the earliest ages of civilisation, the more surprised we are at the wisdom, energy, mental power, and elevation of spirit displayed in them. No age has lacked great men.

Some periods are but dimly known, and their greatest figures only appear mistily, but we know from the effects they produced that these men must have been great in mind and soul. They so impressed their fellow men that they survive in memory as legendary heroes.

Here we are about to notice some of these varied figures from a past that lies close to the horizon of history. They cover a wide range of time—more than two thousand years—and they belong to many centuries. Their thought and activity leave a deep impression that powerful human personality has always been appearing, and will always appear. That is one of the world's great sustaining hopes.

The Chinese, the most numerous race, until recently regarded as fixed in a somewhat backward state, brought forth at least two great men comparatively early. They had such influence that they have moulded Chinese character for more than

two thousand years. The mental power they wielded was used for good purposes. Perhaps it was too successful. It was so great that it was not modified, as time went on, to suit the changes that naturally come in the world.

These two fine men of early China were Confucius, of whom we have read elsewhere, and Mencius. Confucius had died 106 years before Mencius was born, in the province of Shan-tung, in 372 B.C. Mencius made the extension of the work of Confucius his life's ideal. We do not hear of him till he was forty years old. Almost all we know of his early life is that he attributed his views and his character to the teachings of his mother in boyhood; and there is a tradition that he was also trained in wisdom by a grandson of Confucius. When he was about 45 he became the confidential adviser of one of the Chinese kings, with whom he remained five years. But no king would carry out the reforms which he recommended, for he insisted that the welfare of the people should be the sole aim of any king, and not wealth, or power, or glory.

Finding he was resisted by the king, who was his friend, he went to other Chinese kingdoms, for China was then much divided, and he was followed wherever he

EXPLORERS • INVENTORS • WRITERS • ARTISTS • SCIENTISTS

went by a band of admiring disciples. Later he returned to the kingdom of Chi for eight years, and then went wandering again, scattering his wisdom in the Courts of small kings, where he was treated with respect as a man who taught noble ways of living, particularly to kings and governors, who, however, excused themselves from putting his precepts into practice. When he died at 83, he had a band of faithful followers who had treasured his sayings, and by writing them down preserved them so that now China has the works of Meng-tse in seven books. Meng-tse is the name which we write as Mencius, that being the Latin form of it.

The teaching of Mencius was that men are naturally good rather than bad, and ought to take great pains to develop the good side of their nature through kindness, wisdom, and right conduct. He advocated freedom in trade, low taxes, sound work, near-at-hand markets, and good roads. Kings should so act that they will be welcomed with joy wherever they go in their kingdom, for popular happiness and prosperity are the real tests of kingship. Till they are attained a true king will not rest or be satisfied.

A MAN OF OLD CHINA WHOSE VIEWS ARE RESPECTED TODAY

Mencius also argued strongly against war, and was an advocate of benevolence towards the poor; but he did not believe in popular wisdom. He thought the mass of the people needed guidance from those who are wiser than themselves. Their interests should come first, before the interests of the king or the wealthy, but that should be brought about by the free will of the powerful and prosperous. His views have always had great influence in China, and, indeed, are still regarded as of a semi-sacred character.

Moses, the leader and law-giver, who welded the Israelites into a tribe of people, and gave them some measure of national feeling, is unquestionably one of the greatest figures of antiquity. When allowance has been made for the fact that much writing and much religious direction has been attributed to Moses which come from an age far later than his, there is a lofty sense of dignity, power, and organising ability in him, as the Bible story develops.

Moses, it is clear, apart from his curiously contrasted meekness, had enormous power over his fellow-tribesmen. The

date of his entry into the field of history is somewhere about 1300 B.C. That he had sufficient influence over the men of his race to gather them from Egypt, the land of forced labour, and from the neighbouring deserts of northern Arabia, and to change and hearten them till they rallied round a new religious ideal, and became a people with a common aim, proclaims him a man strong in human magnetism and spiritual force.

MOSES AS THE FOUNDER OF MORALITY FOR THE WORLD

His was the formative genius round which the wonderful Jewish race gathered for its strange march through the ages. From him came the very core of its tenacious religion. Around that core a later highly developed priestly system elaborated a minute ritual, but at the centre of it all are the Ten Commandments that he made the foundations of morality, first for his race and then for all the world.

Stripped of trivial formalities the Mosaic ideal, from the first, united a lofty spiritual conception of God with most practical rules of life for a people living under Oriental conditions. The broad lines of human justice were laid down, boldly and firmly, by this great pioneer. It may be said that the statutes of Moses, spiritual and practical, were not new. Most of them were in existence long before the days of Moses, but if that was so there was selection and adoption on a higher level than heretofore.

Though the story of Moses is indefinite in parts, and ends in mystery, the impressions produced are those of power, dignity, and elevation unsurpassed.

Hammurabi (or Khammurabi), king of Babylon, the sixth king in the first dynasty of that empire, according to the records, reigned about the year 2250 B.C., or nearly 4200 years ago, and is the most famous monarch of those early times.

THE KING WHOSE NAME FIGURES IN THE BOOK OF GENESIS

In the Book of Genesis we read of a war when Abraham was alive. Amraphel, king of Shinar, and Chedorlaomer, king of the Elamites, with three other kings, were fighting against four kings in the neighbourhood of the Dead Sea, and Abraham's nephew Lot was captured, but Abraham managed to rescue him. The land of Shinar was Babylon, in the Mesopotamian Plain, and Amraphel was

XERXES, CYRUS, AND HAMMURABI



XERXES AT THE HEAD OF HIS TROOPS CROSSING THE HELLESPONT ON HIS WONDERFUL BRIDGE



CROESUS APPEALS TO THE
CONQUERING CYRUS



KING HAMMURABI DICTATING
HIS CODE OF LAWS

another name for King Hammurabi. The Elamites lived in the hilly country to the east of the River Tigris, where the land rises into Persia, and their king, called Chedorlaomer in the Bible, and Kudar-Lagamar in the Babylonian records, was at first the most powerful monarch in the East. But Hammurabi drove the Elamites out of the Plain of Babylon into their native hills, and then, extending his conquests northward into Assyria, and westward into Asia Minor, federated all the minor kings under his own rule, and reigned from the Persian Gulf to the Mediterranean Sea, with Babylon as his capital. The special god of Babylon was Bel Merodach, or Marduk, and Samas, the sun-god, had a wider sway.

THE MESSAGE OF HAMMURABI WHICH HAS ENDURED THROUGHOUT THE CENTURIES

Here is a proclamation by Hammurabi written in two languages on clay cylinders, now in the British Museum.

Hammurabi, the mighty king, king of Babylon, king of the four quarters, the founder of the land, the king whose deeds unto the heart of Samas and Marduk are well-pleasing, am I.

The summit of the wall of Sippar, like a great mountain, with earth I raised. With a moat I surrounded it. The canal of Sippar I dug out, and a wall of safety I erected for it.

Sippar and Babylon in a peaceful habitation I caused to dwell continuously.

Hammurabi, the darling of Samas, the beloved of Marduk, am I.

That which from days of old no king had built, for Samas my lord gloriously have I accomplished.

We might suppose from reading this memorial inscription that Hammurabi was somewhat of a braggart, but if we look closer at what he says we shall see that, besides serving his gods faithfully, he was doing sound and useful work. It is not because of his conquests in war, though they were great, but because of his substantial work for the good of his people that he has lived long and honourably in history.

THE SPLENDID CODE OF LAWS OF AN EARLY CIVILISATION

Through him we know more about the remarkable civilisation that existed for thousands of years in the Plain of Mesopotamia than from any other source. The lands that he won by war, during his reign of 43 years, he held in a large degree in peace, because he brought them under the rule of law and justice. His great Code of Laws exists to this day, and had

a lasting influence in the East down to the times of the Greek conquests under Alexander the Great, and later. From those early laws many of the laws of the Jews were derived. Abraham, the founder of the Jewish race, we must remember, was a native of Ur, one of the cities under Hammurabi's rule. Not from Egypt, but from Babylon, the Jewish people derived laws in existence a thousand years before Moses was born.

The laws of Hammurabi covered every department of life. There was a system of trial by judges, with the elders of the people in attendance, and right of appeal to higher courts and to the king. The tenure of land, the honesty of trade, the soundness of work done, the wages to be paid, housing and rent—subjects which we regard as specially belonging to our own times—were all regulated by law in Hammurabi's reign. Religion had its own endowments in land, but also its own duties. It was expected to relieve poverty, to provide seed for those whose harvest had failed, and to ransom prisoners who were too poor to buy their freedom.

CONDITIONS OF LIFE IN THE DAYS OF HAMMURABI

All the legal doings under this enlightened king were recorded for reference, and we have today, in the Babylonian writing, many sample judgments, many charters giving wider liberties than had existed, many legal contracts to ensure fair dealing in business, many despatches recording public occurrences.

As regards practical affairs, Hammurabi's reign was conspicuous for its enlightenment. There was a police system in full working order. A regular postal delivery helped business. Irrigation was scientific, and a public duty. Waterways were carefully preserved and new canals were cut. Corn was stored to guard against the effects of bad harvests. Trade by caravan passed freely along safe and well-supervised roads.

The worst feature of the laws was the severity of the punishments. Fines were the commonest punishment, but death was the penalty for many faults if they were wilful. A man who lied might have his tongue cut out; a forger might have his writing hand cut off; a bad wife might be drowned. Any serious wrong-doing was a serious danger to the guilty person. But law and safety were there for the

well-doer in the reign of the great law-making King Hammurabi.

Akhnaton, the most interesting king of the eighteenth Egyptian dynasty, was a son of Amenhotep the Third, one of the most luxurious and magnificent of the kings who ruled Egypt when she was at the height of her power, wealth, and glory. Egypt under Amenhotep was held in deep respect from the Euphrates to the Black Sea and the Levant, most of this wide region being formed of tributary States. The religion of the country was then a worship of many gods, mostly in animal forms, though the chief centres of worship were Thebes, in the temples of Ammon or Amen, and Heliopolis, in the temples of Ra, or Aton. Between the priesthoods of these two shrines keen rivalry prevailed. The reigning kings absorbed Ammon into their own names, and Akhnaton succeeded Amenhotep the Third, under the name of Amenhotep the Fourth, when he was a boy of eleven.

THE KING OF OLD EGYPT WHO BELIEVED IN ONE GOD

But the mother of the boyish king was a confirmed worshipper at Heliopolis of the Sun-god Ra, or Aton, and when he was seventeen and felt he could assert his preferences as a king, he changed his name from Amenhotep, which means The Peace of Ammon, to Akhnaton, which means The Glory of Aton. Henceforward his great aim in life was to spread the worship of Aton the Sun-god, and to discountenance the worship of any other gods. In short, living in the midst of the worship of innumerable gods, each of them supported by a clique of priests, and specially believed in by some section of the people as their favourite deity and fortune bringer, Akhnaton was bold enough to conceive of one God as the originator and sustainer of life, and to conceive of Him as the father and mother of all beings He had made.

He carried out his conviction by leaving Thebes, the city of Amen-worship, and by building a new capital, El Amarna, and dedicating a large site in it to Aton. Also he systematically defaced the inscriptions to other gods, and included in the obliteration the names of his own ancestors, and his own name where Ammon formed a part.

Akhnaton was not only absorbed in his religious reforms, but he was opposed to

war. His interest in the outlying parts of his dominions slackened, and towards the end of his reign he was threatened by revolt from many quarters, and opposed at home by the adherents of the gods he had dispossessed. When he died at the age of 28, in the year 1350 B.C., and was succeeded by his son-in-law Tutankhamen, who reverted to that name from Tutankhaton, the nation quickly returned to Amen worship, and a multiplicity of gods. The temples Akhnaton had built to Aton as the one God were defaced, and the city he had founded was deserted.

AKHNATON'S BOLD EFFORT TO STAMP OUT THE WORSHIP OF IDOLS

Akhnaton, though his plans of spiritual reform failed, has the distinction of being a king who, in the midst of surroundings altogether unfavourable to independent thought or change, cared enough, and was bold enough, to cast aside the idea that mixed idolatry can be helpful to the soul of man. He worshipped the all-reviving Sun as the symbol of an eternally creative Deity, and though, may be, his views were crude, they were a long step in advance of the views held in the days before Moses had begun to present to men a purer faith.

The years of Persia's glory in history, from the rise of Cyrus the Great to the conquest of Darius the Third by Alexander the Great, were only 208. In that period Persia produced three great conquerors, Cyrus, Cambyeses, and Artaxerxes the Third, and two great rulers, Cyrus and Darius the First; and in Xerxes the First she had a king who made a mighty show in the world.

HOW CYRUS OVERCAME HIS MASTER THE KING OF THE MEDES

Of Cyrus legendary stories abounded, and were included in Greek histories, but the plain truth seems to be that he was a Persian king of a small State in the country of the Elamites, and paid tribute to the King of the Medes, who at that time (550 B.C.) was the most active Eastern monarch. The Median King, Astyages, for some unknown reason, attempted to chastise his vassal, but was defeated and captured, and soon Cyrus was accepted as King of the Medes and the Persians.

Cyrus was a gentleman, large-minded and tolerant, and many of the surrounding States were only too glad to be ruled by such a king. The largest rival State was

Babylon, which was then ruled by the antiquarian King Nabonidus, who did much to preserve Eastern history, but was a dreamer rather than a man of action, and had lost grip of the outlying parts of Babylon. The Jews, who were then captives in Babylon, were looking eagerly to Cyrus as a possible deliverer, and no doubt many subject peoples hailed his growing power with delight. So, when he approached Babylon with his army, the city welcomed him, and he preserved it and gave it freedom and safety.

THE GREAT SOLDIER WHO WAS ALSO A GREAT STATESMAN

The Jews were released and sent back to Palestine. With the possession of Babylon, Cyrus succeeded to the Syrian and Hebrew possessions of the Babylonian kings. Where opposition was offered to him, as by King Croesus and certain allies in Asia Minor, he crushed it by force of arms, and soon he reigned from Kashmir to the Black Sea.

Cyrus was a great statesman as well as a soldier. He gave peoples and towns subject to him reasonable independence as long as they were loyal and fulfilled imperial obligations. In religion a follower of Zoroaster as a Sun-worshipper, he was singularly free from fanatical prejudices. As an organiser of Government he had method and firmness and kept in close touch with all parts of his wide dominions. By his rise from obscurity, his energy in war and government, and the impression he produced on men's minds through his character, Cyrus the Persian has a right to be called great. He fell in an obscure war on the northern frontier of his Empire.

THE STORY OF KING DARIUS WRITTEN ON THE ROCKS

After the death of Cambyzes, the son of Cyrus, who succeeded him, and who added Egypt to the Persian Empire, there was a period of confusion when usurpers were seeking to gain the kingship. Out of this confusion emerged Darius, a man of the royal blood, who surprised and slew the usurper who had been temporarily successful. This occurred in 521 B.C., and Darius, called the Great, ruled for 36 years.

He is the one ancient monarch who has helped history by graving on the rocks a summary of his doings as king, which reads as if it were quite frank and true. His inscription on the great rock of Behistun is famous, and has already been

referred to on page 6387; and there are other instances of this useful habit by which Darius left useful messages to posterity about himself.

Darius was not a conqueror of set purpose. He knew that the Empire he ruled was quite as large as the resources of the Persians and Medes and their federated races could manage, so he set himself to govern well that which he already had. But he was obliged to go to war, now here, now there, with the wild tribes that fringed his empire round, and to establish order in their midst as a means of defence for his own country. So whether he desired extension of territory or not his possessions increased. In this way he crossed the Bosphorus to chastise the aggressive Scythians, and passed the Danube in pursuit of them, and so came into that close touch with Europe, and the European Greeks, that was to cost Persia dear. Many Greeks lived in Asia along the coasts, and were under the government of Darius and knew its value.

THE HAPPY REIGN OF ONE OF THE GREATEST KINGS IN HISTORY

They advised the Greeks in Greece to leave the Persians alone; but the advice was not taken, and, as they had done before, many of the Greeks on the mainland gave help to the enemies of the Persians, and so drew Darius into sending expeditions against Greece itself. Two such expeditions were defeated, one at Mount Athos and the other at Marathon, and when Darius died he was planning a final attack on Greece.

It is not by his successes or failures in war that Darius should be judged. He left throughout his dominions a feeling that he had promoted their welfare with foresight and fairness. In Egypt, which had only just been conquered when he came to the throne, he was rated as one of its most appreciated kings. He made a canal from the Nile to the Red Sea so that small ships could sail from the Persian Gulf into the Mediterranean Sea. He developed the trade of his lands, and gave them a common coinage. On the most sensitive of all points—religion—he conciliated races with widely divergent views. The Jew, the Greek, the Babylonian, and the Egyptian, all acknowledged the advantages of his rule. We should have to look far through the pages of history to find a greater king or ruler of men.

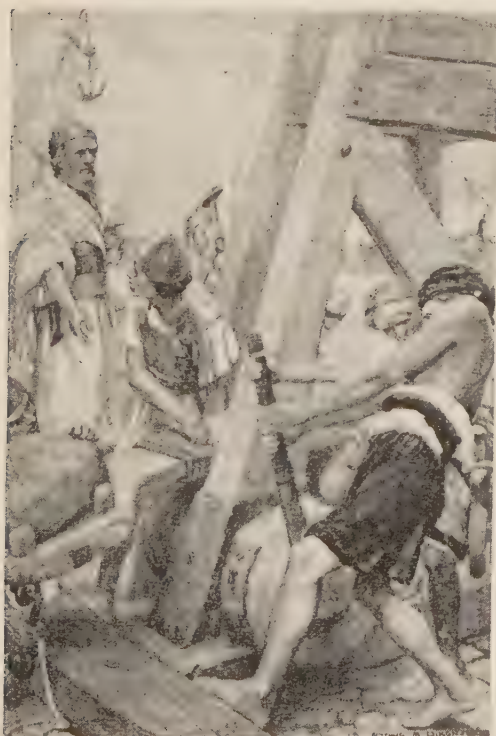
FOUR GREAT MEN OF OTHER DAYS



THE TERRIBLE HAROUN-AL-RASCHID SENDS HIS
BEST FRIEND TO HIS DEATH



HANNIBAL WATCHES HIS ARMY CROSSING
THE ALPS ON THE WAY TO ROME



ARCHIMEDES DIRECTS THE WORKING OF ONE OF
HIS MACHINES AT THE DEFENCE OF SYRACUSE



MOSES, ANGERED BY THE PEOPLE'S SIN, BREAKS
THE TABLES OF THE COVENANT

Xerxes, the successor of Darius, had the double claim to the Persian throne of being descended from both Darius and Cyrus. Darius was his father, and Cyrus his grandfather, through his mother, Atossa. Xerxes had to suppress rebellions in both Egypt and Babylon before he set out on the expedition by which he is best known in history—the attempt to conquer Greece by the biggest army that the world had ever seen. All the resources of the Persian Empire were used to collect men and material for the campaign. The Hellespont was bridged in two places. Alliances were sought with the Greek States which were hostile to Athens. A huge fleet was concentrated in Levantine waters. At first the armies of Xerxes swept the Greeks away after defeating their fleet, and Athens was taken. When all seemed lost, the Greek fleet again engaged the Persian fleet and, in the bay of Salamis, won a decisive naval victory which gave them the command of the sea and cut off the army of Xerxes from the Asiatic shore.

THE DRAMATIC END OF THE GREAT EXPEDITION OF XERXES

Realising that his campaign had failed, Xerxes himself returned to Persia, leaving his army in Greece under the command of his general, Mardonius. The Greeks were now as encouraged as the Persians were discouraged, and attacking the invaders at Plataea, in 479 B.C., they utterly routed them. The Persians were quite unable to resist the solid masses of Greek infantry armed with long spears, and advancing in the formation known as the phalanx.

Xerxes, who is the king known in the Book of Esther as Ahasuerus, tried in vain to infuse a confident spirit into the Persians. They were beaten and knew it. The king himself, as time went on, became demoralised, and finally was murdered by his prime minister. After Xerxes had been dead 110 years the Persian King Artaxerxes the Third attacked and conquered Greece, but seven years after his death Persia was prostrate before the victorious invasion of the Greek King Alexander the Great.

Naturally, perhaps, the eyes of posterity are turned most frequently on men who did sensational deeds in the past that arrested general attention—on kings who fought great battles and annexed foreign countries, or on men who wrote books that

stir for ever the minds or the hearts of their fellow men; but the past is also adorned by quiet, inconspicuous men of science who passed on through the ages learning or inventions that have proved inconceivably useful in later times. One of the greatest of such men was Archimedes, a Greek mathematician, who sought knowledge for its own sake.

THE GREAT IDEA THAT CAME TO ARCHIMEDES IN HIS BATH

Archimedes was born about 287 B.C. in the Greek city of Syracuse in Italy. He studied, when young, in Alexandria, then the most famous centre of the world's learning. Nearly all his later life was spent in his native city, where he was the intimate friend of its king.

His studies in mathematics are much too difficult to explain here. Suffice it to say they have been of great use to men of the highest learning, particularly many forms of measurement.

Three things he did are practical enough to be understood by anyone. The king asked him to find out if his crown was of pure gold. This he did by putting the crown in a vessel full of water, and observing exactly how much water is caused to run over the sides of the vessel. Then he put an equal weight of gold in the same full vessel of water, and observed exactly how much water that displaced, any difference being occasioned by metal in the crown which was not gold. It was this experiment that he thought of while he was in his bath, and in his excitement sprang out of the bath and ran home without his clothes shouting, "Eureka!" which means "I have found it."

HOW THE INVENTIONS OF ARCHIMEDES KEPT THE ROMANS AT BAY

The Archimedean screw for raising water was his invention. During his later years Syracuse was besieged by the Romans under Marcellus, and at the request of his friend the king, the philosopher invented mechanical engines of defence which lifted the prows of the Roman ships out of the water and then dropped them and sank them. He is also said to have set the ships on fire by burning mirrors. His inventions delayed the capture of the city for three years. When it was stormed he was killed by a Roman soldier while he was working out a mathematical problem in the sand of the seashore. The Romans buried him with

GREAT MEN OF ANTIQUITY

great honour, for they fully realised he was a man of genius.

Of all the kings of the ancient world Minos is probably the one which the modern world would be most interested in hearing about in a definite manner. He reigned in the island of Crete when it was the centre of a civilisation that is now called Minoan after him, and that for thousands of years was forgotten.

Such knowledge as we have comes to us in three ways. First, some of the Greek historians wrote of him as one of the wisest and best kings who had lived before Greece became famous. His laws were said to have been those on which the oldest laws of Greece were based. He kept order, by land and sea, in the Eastern Mediterranean, and his country was magnificent and prosperous, great in art and in commerce.

Then, around his name sprang up many legends, transmitted through Greek poetry, as in later times legends were woven round the names of King Arthur of Britain, and Charlemagne, King of the Franks. It was said that in his palace was an underground labyrinth or maze, in which any stranger was lost; and there was kept a strange monster, half man and half bull, known as the Minotaur. Every ninth year the tyrant king demanded as tribute from Greece seven

young men and seven maidens, who were devoured by the monster. So strange were these mythological stories about Minos that some who read them thought there had not been any king Minos, but that he was only a figure in poetical fable.

In recent years, however, the traditional site of the palace of Minos, at

Knossos in Crete, has been carefully and thoroughly excavated, with remarkable results. The palace, a most labyrinthine building, has been disclosed, and a great deal of knowledge has been gained about the people who lived in Crete in the days of Minos, as we read on page 322. We still know practically nothing about the personal life of Minos, but it is clear that he lived in the midst of a civilisation of an advanced kind, in great magnificence, and that his country played a leading part in the eastern Mediterranean, exchanging the products of its industry and art with ancient Egypt, and influencing powerfully the life of the world.

His people seem to have been the precursors of the Phoenician mariner race who later dominated the sea-borne trade of the world; and it is now believed that the invention of the alphabet and writing which had been attributed to the Phoenicians, was not by rights theirs, but that they only changed in style the writing of the Minoans. In

short, it may be said that a stage in human development that lies beyond the thought and art of the Greeks had been lost to men's knowledge when Knossos and other Cretan towns were destroyed. Indeed, the one personality in that forgotten period that impressed itself on men's minds was a real and great king, Minos by name;

and his greatness is shown by the fact that when all his works were buried in the earth, vague memories of him, dressed up in fanciful forms, were transmitted from generation to generation. So Minos comes to us as a great, though shadowy, king.

There are many students of war who believe that the greatest general who ever



KING MINOS



HAMMURABI'S CODE OF LAWS
INSCRIBED ON A STONE



A PICTURE OF DARIUS,
FROM PERSEPOLIS

lived was not Alexander the Great, or Julius Caesar, or Napoleon Bonaparte, but Hannibal of Carthage. That leading commercial city was founded in northern Africa, about 822 B.C., near the present site of the city of Tunis, by the Phoenicians. It succeeded Tyre as the mistress of the Mediterranean. As time went on it captured Sicily, Sardinia, and the Balearic Islands, and founded settlements in Madeira, the Canary Islands, and on the west coast of Africa. Then frequent wars followed with Rome, which ended in the conquest of Sicily by the Roman army.

THE PASSAGE OF THE ALPS WHICH COST HANNIBAL HALF HIS ARMY

As a balance to this loss Carthage invaded Spain with Hamilcar as the general. When he was killed he was succeeded by his son-in-law Hasdrubal, and, on his death, the Carthaginian army elected young Hannibal, son of Hamilcar, as their general. As soon as he was appointed commander-in-chief he completed the conquest of Spain as far as the Ebro, and then planned an attack on Rome.

He could not hope to cross the Mediterranean Sea with an army large enough to capture Rome, so he determined to march from Spain through France, then called Gaul, and cross the Alps into Italy. This wonderful feat he safely accomplished. Carthage itself provided him with comparatively few soldiers, but he recruited his army in Spain, and in Gaul, where Rome had many enemies. The passage of the Alps cost him nearly half his army, but when he reached the plain of northern Italy he repeatedly defeated the Roman armies through superb generalship, and reached the neighbourhood of Rome. He had not, however, with him the means wherewith to besiege the city, and so had to wait for supplies from Carthage. Those supplies never reached him in sufficient amounts to enable him to take Rome; but for fifteen years he remained in Italy.

THE TERRIBLE YEARS AT THE CLOSE OF HANNIBAL'S LIFE

Meantime the Romans had crossed to Africa, and were attacking an untrained army, and opposed to him were the victorious veterans of the Roman general Scipio. In that unequal fight Hannibal was defeated, and Carthage was obliged to submit to Rome and pay tribute to her. The Carthaginians, however, made him their chief magistrate, and so well did he

rule that the country began to revive, and Rome began to fear her old enemy afresh, and demanded that he should be surrendered to her. The remainder of his life was spent in passing from country to country, chased by the Roman power, and finally, when he was about to be betrayed by a servile king in Asia Minor, he took poison to escape capture.

The greatness of Hannibal's skill as a soldier is shown by what he achieved with the most slender resources. His life was spent far from home, in enemy lands, without adequate support from his own countrymen. In all probability he would have taken Rome if his brother Hasdrubal had been able to join him in Italy with reinforcements. But the Romans intercepted Hasdrubal and defeated him, and Hannibal only heard of his brother's failure through his head being thrown into the Carthaginian camp.

One of the most remarkable kingly figures that has ever dazzled the eyes of men was the Caliph Haroun-al-Raschid, chief of the Moslem world between A.D. 786 and 809. He now lives in men's minds chiefly through *The Arabian Nights*, into which he is introduced.

THE AIR OF SPLENDOUR SURROUNDING A KINGLY TYRANT

Both as ruler and as religious leader he was acknowledged as absolute from India through Asia and northern Africa to the Atlantic Ocean. Early in his life he had showed an aptitude for war, and throughout his reign he was one of the most active of governors, frequently visiting many parts of his dominions; but his wealth and magnificence, his patronage of learning, and his will to do whatever he pleased, have most impressed the world.

Haroun was the completest example of a kingly tyrant. No consideration weighed with him if his vanity was hurt. He rose to worldly greatness through the faithfulness of his friends when he was young, and the more loyal they were to him the more certain was a cruel fate to overtake them if he saw any reason to regard them with jealousy. His wise Vizier Yahya and his dearest friend Jaffar were among them.

All the world knew Haroun-al-Raschid as the world's supreme example of human power and magnificence in his own day. Now he is its greatest proof of the impossibility of uniting unchecked power with justice and true greatness.

The Great Stories of the World That Will Be Told for Ever



HOW THE MOON CAME TO HAWAII

THERE was once a King in Hawaii who sent for his court wizard, and said: "Every time my fishermen let down their lines in a certain part of the sea the hooks are cut off. They feel no tug as though a fish were biting, but when they draw up the line it is cut through."

The wizard replied: "They must have been fishing over the country of Lalo-Nana, which lies at the bottom of the sea. A sister and two brothers live there, all far more beautiful than mortals."

"I must see them," cried the King.

The wizard said that the brothers were on a journey, but he would try to entice the woman ashore.

A few nights afterwards a trumpet was blown, and the sound awoke the sea-maiden in Lalo-Nana. She left her coral house and her garden of sea-flowers and her luminous fishes to see what it was. To her surprise she saw something like a man hanging midway between the surface and the bottom. She drew near, and found it was only an image suspended by a cord, but it was beautifully carved and richly dressed. Cautiously the sea-maid swam to the surface to see what kind of fishermen were angling with such strange bait. She saw a row of canoes anchored at intervals all the way to the shore, and in each of them was an image.

The sea-maid swam from one to another, admiring their ornaments and clothes in the starlight, for there was no Moon in those days. Perhaps she thought a magician had turned all the islanders to wood. Now it would be safe to explore the forbidden upper world. So she stepped ashore, and followed a line of images through the flowery forest of Hawaii till she came to a little house. Weary with long swimming and walking, the sea-maid sank down to sleep.

She was wakened by the King, who had fallen in love with her and who begged her to be Queen of Hawaii. She consented, and for a long time she was delighted with the wonders of the island. Then she wished to give her husband a present in return for the necklaces and bracelets he had given her.

"Send a diver to my coral house under the sea," she said. "There he will find a casket, which he must bring ashore unopened. In it is a treasure which my brothers and I have guarded for years."

The diver brought the casket to the palace safely, but as soon as the Queen opened it a great shining thing flew out and sailed through the door up to the skies. It was the Moon. There it shone among the stars, but, to the Queen's terror, its reflection shone in the sea as well!

IMAGINATION · CHIVALRY · LEGENDS · GOLDEN DEEDS · FAIRY TALES

"My brothers will know I have lost the treasure," she cried. "They will return to the coral house and find me gone. They will come ashore in a great flood to find me."

"Fear not, Hina," said the King (for Hina was the sea-maid's name). "We will all go up to the mountains with our cattle and treasure. The sea cannot reach us there."

So the Hawaiians fled to the mountain-tops. Soon after a storm arose, and presently a huge tidal wave rushed ashore. Hina saw her two brothers riding on the foam, and heard them calling her. When the flood subsided all the crops were ruined, and the whole island lay desert.

Everyone was far poorer now, even the King, and from thinking that Hina was the cause of his misfortunes he came to hate her. He made her toil from morn to dusk at the hardest work till her life was slavery, and often as the poor woman laboured she thought, "Ah! If I could only find some place to rest in!"

She dared not go back to the sea for fear of her brothers. She could not escape from her husband on the island. One day,

as she was fishing, she saw a rainbow bridge stretching to Earth. She understood that the Sun had pity on her, and was showing her this way to escape.

Hina began to climb the rainbow, but as she got nearer to the Sun the great heat scorched her till she could bear no more. She swooned, and slipped from the bridge to the ground.

When she recovered from her fall it was night. She could hear her husband calling her angrily, and knew he would ill-use her for the work left undone. At that moment a wonderful thing happened. A Moon rainbow appeared.

"Ah, it is very quiet in the Moon!" said Hina. "There I shall be able to rest."

She began to climb the silver bridge. The King came out of the trees and ran up to stop her. He was afraid to climb the magic bridge, but he seized her foot. She wrenched it free, breaking it, and crawled on. At length she reached the cool, silvery Moon country.

There she still lives, lame but happy, and the fairy-like clouds you see drifting round the Moon are of Hina's spinning.

THE HEROINE OF NOTTINGHAM CASTLE

ONE of the brightest stories from the Civil War is that of the defence of Nottingham Castle by Colonel and Mrs. Lucy Hutchinson.

The king set up his standard on August 22, 1642, at Nottingham, near which town the Hutchinsons lived. The whole country was in a ferment, and Henry Ireton, their neighbour and relative, urged them to support the Parliamentarians, which they did. Mr. Hutchinson received a commission as lieutenant-colonel, and the family removed to Nottingham. Soon, as Governor of Nottingham Castle, Colonel Hutchinson had to defend it.

For four years Mrs. Hutchinson was shut up in the castle, acting as surgeon during the siege, tending the sick, supplying food for the big household, and ever cheerful and wise in her counsels.

She shared all her husband's plans, approved his stern refusal of the many attempts to bribe him into submission, and showed in the notes she wrote down at the time that she must have witnessed scenes and undergone anxiety enough to quell the stoutest heart.

There were her little children, too, who needed her constant care.

Newark, a neighbouring town, was on the Royalist side, and many of the citizens of Nottingham were also Royalists. One of them during the night secretly let the Governor of Newark and six hundred soldiers into the town. Next morning the colonel found himself besieged in his little fortress with eighty men. Enemies were all around, but messengers got through and sent for succour to the garrisons at Derby and Leicester.

On the third day Colonel Hutchinson was invited to parley with the Royalists, and his answer was to hoist a red flag on the tower of the castle. Two more days passed, and then, to their relief, the watchers on the tower saw a party of horsemen galloping to their assistance. As these men drew near the Royalists retreated, but not without a sally from the besieged.

When the war was over Mrs. Hutchinson acted as peacemaker between a band of soldiers preparing to attack the town and the citizens arming for its defence; and later, when the Stuarts came back to power after Cromwell's death, she worked to secure her husband's pardon. It was denied, and the brave wife comforted her imprisoned husband until his death.

STORIES OF THE SAINTS

In early times, in every land, there grew up round the memory of men and women who had been greatly admired stories which made their fame lasting, though the details might be changed. The impression remained, if sometimes it became more legendary than historical. We see it in the rude, fierce heroes of the Northern races, who admired force and bravery; in the poetical imagery of Greece; in the dreamy tales of the religious heroes of the gentler East; in the legends of the great figures of the Age of Chivalry. And as goodness spread, as the gentle power of the Christ-like life was seen in the men and women whom we now call Saints, there grew up many legends around the memory of these saintly characters. Many of them are both beautiful and true, but all are worth knowing. Such lives, founded on fact, but sometimes cast in story form, are the foundation of much of the art of the early painters, and by the beauty of their teaching they have influenced a vast multitude of lives.

THE PATRON SAINT OF SHOEMAKERS

THE patron saint of shoemakers is St. Crispin, and the reason is this. In the third century there lived at Soissons two brothers who were called Crispin and Crispinianus.

They were teachers of Christianity; but they thought it right to earn their own living, and this they did by making shoes. They took money from the well-to-do, but charged the poor nothing.

Their fame spread so that many of the people in Gaul visited them, and learned from them the story of Christ's love. At last there came to Soissons the heathen emperor, and he commanded that these shoemakers should be arrested. They were tried, tortured, and afterwards beheaded.

Whenever you see the picture of a saint with the palm of victory in one hand and an awl in the other, you may know it is either Crispin or Crispinianus, the patron saint of shoemakers.

SANTA CLAUS

A YOUNG and rich man was walking one day through the streets of his native town when he heard sounds of lamentation from the house of a nobleman whose money was all lost, and who was now living on the verge of starvation with his three daughters. The young man listened, and he heard a girl's voice say: "Father, let us go into the streets and beg, for it is hard to starve."

Then he heard the father answer: "Not just yet. Not tonight. Let us wait one more night. I will pray God again to save my children from such disgrace."

Nicholas hurried home. Among the treasures he had inherited from his father were three bars of solid gold. He took one of these bars at night to the house of the poor man, and, finding an open window, which he could just reach by standing on tiptoe, he thrust in the bar of gold. He came a second night,

and left the second bar; and the third night, and left the third bar. But the third night he was discovered, and the poor father, who believed the gold had come from Heaven, knelt at his feet. Nicholas lifted him up, and said:

"Give thanks to God, for it was He who sent me to you."

This and many another splendid gift of love did Nicholas in the name of God, and always in secret, so that he is called St. Nicholas, and children believe that at Christmas he fills their stockings with gifts. They know him as Santa Claus.

THE LITTLE POOR MAN OF ASSISI

THERE lived in the town of Assisi, in Italy, in the thirteenth century, the son of a very wealthy merchant, and his name was Francis.

He was a handsome, bright-eyed, merry-hearted boy, and as he grew up to manhood he lived only for pleasure and excitement.

But in the midst of his wild and selfish life there came to him a voice from heaven, and he saw all at once how foolish he had been.

Francis gave up his mad ways and set himself to serve God. He tore off his rich clothes and lived like a beggar. His father was angry. His old companions pelted him with mud. Nearly everybody thought he was mad. But some people began to perceive that a great change for good had indeed come over Francis. For he did not rave, he did not shout; he was the same cheerful, bright-eyed, happy-minded man, but with this difference—that all his cheerfulness came from the love of God.

And this was the secret of St. Francis. He adored poverty. If, said he, Christ became a poor carpenter's son for us, surely we ought to make ourselves poor for Him. He spoke of poverty as a lady, and said he had married this beautiful

lady of poverty. He wore a rough brown dress, ate simple food, and spent all his time in teaching people to desire poverty; that is to say, to love God so much that everything rich and grand and magnificent appears silly and trivial and unworthy.

He loved everything that God has made. He hated cruelty. He told people to love "our sisters the birds"; he spoke of the wind as "our brother," and of the rain as

"our sister." He felt that all things are related, and that God is the Father of all.

For six hundred years men have loved St. Francis, whom we call the Little Poor Man of Assisi. He is dear to us for many reasons; but perhaps we are most grateful to him for just this simple teaching: that we should never be unkind to bird or beast, but should spread the love of God among every living thing.

CECILIA THE SWEET SINGER

THERE was a strange scene one day in Rome in the early days of Christians. A handsome young Roman soldier, Valerian, had just brought home his bride, a beautiful Roman girl, Cecilia. The festivities were over. The guests had all gone. Valerian was alone with his bride. Then Cecilia said to him:

"I am your wife, but I do not belong to you. I belong to Christ. All my life I have given myself to Christ, and I have an angel who will guard me from evil."

Valerian was much surprised, for he had no idea that the noble parents of Cecilia were among the despised Christians. To be a Christian in Rome meant death.

"Show me this angel," he said; "then I shall know if what you say is true."

She told him that he could not see the angel until he had learned to love Christ; and she bade him go along the Appian Way, outside the walls of Rome, and ask the people there to direct him to Urban the Good. This Valerian did, and he

found Urban underground in the Catacombs. Urban told him the story of Jesus, and Valerian believed and was baptised. So happy was he in his new faith that he persuaded his brother also, and these two, with the beautiful Cecilia, spent their lives in doing good. The home was very happy, for Cecilia had a lovely voice, and she sang songs of praise which thrilled the hearts of the two brothers, and they knew that after death they would all meet in a happier world.

Soon it became known that Valerian and his brother were Christians, and they were put to death. But Cecilia became bolder in preaching, and was brought before the governor.

"What sort of a woman are you?" he asked roughly. "And what is your name?"

"I am a Roman lady," she replied proudly. "Among men I am known as Cecilia, but my name is Christian." And for her faith, so courageously confessed, she was condemned to a cruel death.

THE STRONG MAN WHO CARRIED THE POOR

AN old hermit was sitting in his cell one day when there appeared before him a mighty man, who said his name was Offero, and told him a strange story.

"I was strong from my youth up," he said, "and beat every comer at games. But I wearied of these idle things. A voice within me drove me forth, and would not let me be satisfied.

"So I put on my armour and took my sword, and journeyed till I came to the palace of the greatest king on Earth. Him I served till one day I saw him make a sign on his forehead whenever the minstrel who sang before him made mention of the Evil One. I would not serve him longer because he feared the Evil One, and was not a brave man.

"So I journeyed on, till in the centre of a black forest I found Satan keeping

his court. 'Art thou the bravest king on Earth?' I asked, and as he said that he feared nothing I took service with him.

"But one day I saw him cower from a little wooden cross set up on the highway, and I challenged him, saying: 'What! are you the bravest man on Earth, and fear a piece of wood?' 'It is not the cross I fear,' said he, 'but Him who once hung there.'

"So I left him, and have ever since striven to discover who is this Christ that hung upon the cross. And now the voice within me has brought me to you. Tell me, I pray you, the story of Christ."

The hermit told him, and the giant swore that he would serve only Christ henceforth. The hermit said that Christ did not wish men to fight for Him, but to fight against evil by gentle living.

Offero said that might well be true; but God had not given him great muscular strength for nothing, and that strength he would devote to Christ.

So the hermit took him to the banks of a wide and angry river, and bade him dwell there and help poor people to cross. This pleased Offero well, and he built a hut, and tore up a pine tree for a staff; and when poor people wanted to cross the angry flood he carried them over, and said he did it for the love of God.

One wild night a child came to him to be carried across, and Offero set him on his shoulder and waded into the stream.

But as he went the child grew heavier and heavier, so that Offero's knees bent under him. Yet he got across, and when he set the child down he said:

"How is it that you are the heaviest burden I ever carried?"

Then the child became glorious with a wondrous light, and said to Offero:

"Heavy did I seem because I bear the sins and sorrows of the world. I am Christ. And because thou hast been kind to the weak, and borne Christ on thy shoulders, I will call thee Christopher."

Then the Child vanished, and Christopher kneeled in the darkness.

THE GIRL WHO DEFIED AN EMPEROR

ONE of the commonest sights on the Fifth of November is the catherine-wheel. It is named after Saint Catherine, who was bound to a wheel. Catherine of Alexandria was the cleverest girl of her day in Egypt. She lived in the fourth century, when most of the people about her were heathen. One day she heard that the Emperor Maximinus had ordered that many poor people should be slain as a sacrifice to the idols the emperor worshipped, and Catherine went to his palace and condemned his cruelty.

It was in vain that he tried to argue with her. She was too clever for him. So the emperor sent for his wise men to argue with her; but she defeated them all in a great debate, and many people became Christians on hearing her wonder-

ful words. This made the emperor angry, and he ordered that she should be put to death—tortured on a wheel.

What this wheel was like we do not know. One account says that it was shaped like an ordinary wheel but armed with spikes. Another account says that it was not one wheel, but four wheels joined. Whatever the nature of the wheel, poor Catherine was bound to it.

But a wonderful thing happened. No sooner had she been tied to the wheel than an angel appeared and set her free. He broke the wheel in pieces.

But the emperor was not content. He had Catherine beaten with scourges, and cast her into a dungeon without food; and at the end of twelve days she was led forth and beheaded.

JOHN OF THE GOLDEN VOICE

FROM out the dimness of the far distant past there comes to us the fame of two very wonderful orators who impressed men so deeply that the echo of their voices seems to reach us still. Those orators were Demosthenes, a heathen but highly civilised Greek, and John of Antioch, who was welcomed into the list of Christian saints, and who is for ever known as Chrysostom, meaning the golden-mouthed.

John Chrysostom's life falls into about five chapters, and all of them are honourable. First he was a good boy, taught by a pious mother, and so had the pure joy of growing up sweet in spirit. Then he was educated in oratory that he might be a lawyer. But his mind turned naturally towards religion, and he went into solitude to think and pray and prepare himself for Christian work.

Returning presently to the crowds of men, he became a preacher who charmed all ears, and at last he was made archbishop of Constantinople.

And now, having power, he became a great reformer and a generous helper of the poor and suffering. He lived a pure life himself and demanded it from others, especially from those who were in positions of influence, like kings and priests. If the lives of such people were on a low level he made them uncomfortable by very plain speech.

For this he was at last banished into the wilderness of Asia Minor; but that did not trouble him, for there he found people who needed his preaching. And everywhere were people who wished to hear him preach, and demanded that he should be restored to the world. His persecutors

gave way and pretended to bring him back to freedom, but they treated him so badly that he died on the way.

Yet still Constantinople, which knew him best, asked for him, and in 438 his persecuted body was taken to the city, and his name was enrolled among the saints.

THE MARTYR GIRL OF SICILY

QUINTIANUS, the Governor of Sicily, was in love with a very beautiful Catanian girl named Agatha.

She was proudly bred and of rich parentage; so that when she avoided him he thought she was moved to do so by her pride. But presently he discovered the truth. Agatha was a Christian.

The governor had her brought before him. For a long time he pleaded with her to give up her religion; but she would not. Then the love of Quintianus turned to

Chrysostom wrote much as well as spoke much. His character was of great loveliness all through his life. Here is a deep and wise saying of his that deserves to be written in letters of gold, for it bears thinking about for a lifetime: *No man can hurt him who will not hurt himself.*

a hideous hatred. He had this beautiful girl cast into a dungeon. Then she was stretched on the rack; but she clung to Christ and would not deny her faith.

Then the monster who had once loved her attacked her with his sword, and she was thrown back into her prison terribly wounded. No doctor was allowed to see her, no nurse to tend her. As she lay on the ground of her cell, no cry or moan escaped her lips; and she sighed out her soul in a great peace.

THE BOY WHO FLED FROM ROME

MANY years ago there was a wealthy family in Italy, and the only son was the hero of the house. His parents wished him to become a judge, and they sent him to Rome to study law.

But the boy, whose name was Benedict, was shocked by the luxury that met his eyes in Rome, and at last he ran away and hid in the hills, determined to serve God in loneliness. But his old nurse followed Benedict, and waited on him.

For a long time he lived in this manner, until it seemed to him wrong that he should let this old nurse fetch him food, and once more he ran away.

This time he travelled far into the mountains, and lived in a wild cave.

Many years passed, and people heard of the holy man living alone in a cave and visited him. A company of monks were so impressed by his preaching that they asked him to come and rule over them, and this he agreed to do. But Benedict found that the monks lived too easily, and he introduced a greater sternness into their lives. Then the monks repented that they had ever asked him to be their superior, and Benedict returned to his cave. Many holy men came to live near him, and he built houses for them to live in.

St. Benedict caught a fever in nursing the poor. He was borne into the chapel, and died before the altar he loved.

URSULA AND THE TEN THOUSAND MAIDENS

A WONDERFUL sight was seen one day in Brittany. In a great meadow were gathered together ten thousand maidens from Britain, and on a throne was seated the Princess Ursula of Brittany, telling the story of Jesus.

Ursula was the only daughter of the King of Brittany, and so lovely that the story of her beauty had passed into all lands. Prince Conan of Britain desired her for his wife, and she told him to send her ten of his great ladies, each escorted by a thousand maidens, and to wait for her three years. Then she taught these maidens Christianity, and set out with them to visit foreign lands.

Ursula and her company of ladies made a wonderful impression wherever they went, and many people became Christians because of them. And Prince Conan followed her, with many bishops and clergy, including even the Pope of Rome.

But in her pilgrimage Ursula came to a place where the people rose against her, and slew the bishops and clergy, and Prince Conan and his knights, and all the women except herself.

So Ursula was brought before the king, who declared that he would marry her; but she spoke to him so truly of the wicked things he had done that he seized an arrow and with it pierced her heart.

ALTHAEA AND THE BURNING BRAND

ALTHAEA, Queen of Calydon, lay with her new-born babe at her side. It was night, and the room was lit only by a wood fire. The nurse slumbered, but the mother lay awake thinking of the little son, who was to be called Meleager.

All at once she saw three misty shapes in the room. As they grew clearer she saw that they were old women, crowned with narcissus, and guessed that they must be the three Fates who preside over man's birth and death.

"He shall be valorous and great," whispered one of the old women.

"He shall be stronger than mortal men," said another.

"He shall live as long as that firebrand is unconsumed," prophesied the last.

Then they faded away.

Althaea rose with all haste, drew the stick from the fire, and put out the flames with water. Then she locked it away as the most precious treasure in the whole kingdom, for it was her son's life.

Meleager grew up as the Fates had foretold, a famous hero. He was one of the Argonauts. He defeated his father's enemies when they invaded Calydon. He finally slew the monster boar, whose hunting is one of the great events in mythological history.

All the chieftains of Greece were at the hunting, including Althaea's dearly-loved brothers Toxeus and Plexippus. There was also in the party Princess Atalanta, the huntress and swift athlete, whom Meleager loved. She was the first to wound the Calydonian boar, and when

Meleager finally slew it he gave her the head and hide for trophies.

Toxeus and Plexippus were angry at such honour being shown a woman. They had as much right as she to the monster's relics, they thought. Together they went to Atalanta's tent, and tried to take the trophies by force. Atalanta defended her prize with the sword, and called on Meleager for help. He ran up, and, seeing his beloved attacked, became beside himself with rage. In the scuffle that followed he killed both his uncles.

News of the boar's death had reached Calydon already, and Althaea went to the temple to give thanks. On her way she met two biers.

"Who are the dead?" she asked.

"Your brothers Toxeus and Plexippus," answered an old servant of the princes, "slain by your son Meleager."

At this such grief and wrath seized Althaea that she forgot all else. She hastened home, unlocked the chest where she kept the firebrand, and flung it on the fire. The stick was dry, and burned in a few seconds. As it fell to ashes Meleager, returning to Calydon in triumph, fell dead on his horse's neck.

When Althaea's fury had passed a great terror seized her. She clung to the hope that perhaps after all the firebrand was only ordinary wood. But soon messengers came with the news that Meleager was dead.

Now Althaea knew that she had loved her son above everything in life. In utter despair she slew herself, so that her ghost might seek his and crave its pardon.

THE CHILDREN OF THE SKY

IN the morning of the world an angel was sent on a message to a holy man dwelling in a desert in Persia. But as the angel was flying through the air he saw a beautiful Persian girl sitting by the side of a well and braiding her hair with blue forget-me-nots. He came down and made love to her, and for a while they lived very happily together.

Suddenly the angel remembered that he had not delivered the message with which he had been entrusted. He flew back to Heaven to ask pardon for his forgetfulness, but he found that the gate was closed to him. For a long time he stood by the shut gate weeping, and then the Archangel Gabriel appeared, and said,

"You must people the Earth with the Children of the Sky before you can bring a daughter of the Earth into Heaven."

The angel did not understand what this meant, and asked his beautiful bride if she could explain it.

"Yes," she replied, taking some of the flowers from her hair. "These lovely little blue forget-me-nots, which reflect the exquisite colour of Heaven, are the Children of the Sky."

So the angel and his bride wandered hand in hand over the Earth, and planted forget-me-nots in every country. Then, when their task was ended, the angel took his bride in his arms and carried her up to the gate of Heaven.

DAMON ET PYTHIAS

This is a French translation of the story told in English on page 4365

DENYS était un célèbre tyran qui régnait à Syracuse, ville de Sicile. Quiconque avait le malheur de lui déplaire était mis à mort.

La colère du tyran s'abattit un jour sur un jeune homme nommé Pythias, qui s'était plaint de la cruauté de Denys, et qui fut condamné à mort. Il demanda la permission d'aller voir sa femme et ses enfants, mais Denys se moqua de lui, pensant: "Une fois que tu seras hors de ma portée, tu ne reviendras sûrement pas."

Pythias dit qu'il avait un ami qui se porterait garant de son retour, et son ami Damon s'offrit comme otage pour Pythias. Si Pythias ne revenait pas, disait-il, il mourrait à la place de son ami.

Le tyran fut surpris qu'un homme aimât son ami à un tel degré, et il accorda à Pythias six heures pour aller voir sa femme et ses enfants.

Pythias s'attendait à être de retour au bout de quatre heures, mais les quatre heures s'écoulèrent et Pythias ne revenait pas. Cinq heures, presque six passèrent, et toujours aucun signe de lui. L'homme le plus heureux de toute la prison était Damon, qui espérait positivement que Pythias ne reviendrait pas, car il désirait vivement souffrir à sa place, et sauver son ami, par égard pour sa femme et ses

enfants. Enfin l'aube du jour fatal parut, l'heure approcha, et Denys vint voir mourir son prisonnier.

Tranquillement, courageusement, Damon se prépara au supplice. Son ami, disait-il, avait eu quelque accident, peut-être était-il malade. Cependant, presque au moment même de l'exécution, Pythias arriva et embrassa son ami.

Il était fatigué, ses vêtements étaient poudreux. Son cheval avait été tué, il lui avait fallu s'en procurer un autre; mais, en allant grand train, il était arrivé juste à temps pour empêcher Damon de mourir à sa place. Mais Damon ne l'entendait pas ainsi. Il supplia Pythias, il supplia Denys, de lui permettre de subir le supplice au lieu de son ami.

Jamais Denys n'avait été témoin de pareille amitié. C'était quelque chose de grandiose, dont il ne soupçonnait pas l'existence, que cette amitié qui accueillait la mort avec joie, si la mort devait venir en aide à son ami. Son cœur s'émut; il voulut que de tels hommes devinssent ses amis à lui.

Il s'approcha de Damon et de Pythias, occupés à se disputer, chacun avide de donner sa vie pour l'autre. Denys les prit par la main, les mit en liberté, et les supplia de lui permettre de partager leur amitié.

THE BABY WHO COULD NOT BE LOST

ONE of the interesting little stories of the First World War is this tale of a baby who could not be lost, a princeling, passed from hand to hand through a series of golden deeds, till he found himself at home once more.

Prince Vladzis Geodric was but a babe in arms when his Galician father, a connection of the then Royal House of Austria, left his home to fight for Austria against Russia.

But the Russian army in its advance swept over Galicia, beyond the castle where the baby was born, and his mother fled with him towards safety, as she hoped. When the flight grew into panic the babe was left behind, and, as he lay wailing in a ditch, was picked up by a kind-hearted Russian officer, and by him handed over to a Russian lady, who adopted the tiny waif and took him to her distant home at Tiflis, in Georgia.

There the little fellow, as well became such a lucky baby, had his photograph

taken, and, as photographs will, it found its way into a Russian illustrated paper.

Presently the tide of war changed, and it was the Russians who were falling back and being taken prisoners. One of the prisoners had in his pocket the picture paper with the child's portrait when he was taken before an Austrian officer to be searched. That officer was Prince Cyril Geodric, the father of the little lost Vladzis.

Even in war there are pleasant ways of being friendly when hearts are touched, and the end of this story is happy. Through the Swedish Court the Austrian prince managed to send a message to the Georgian lady who was rearing the lucky lad so kindly, and presently the little boy was on his way home along the war-crowded railways, under the charge of a special courier, and with two attentive nurses to care for him.

All along, it will be seen, hearts were softened by the sight of a little child.

KING ARTHUR'S RIDDLE

ONE Christmastide, when King Arthur's Court was at the height of its glory, a lady came into the banquet hall crying for vengeance.

Kneeling before the King, she told how she and her betrothed were riding over the moor when they came to a great castle by a lake. A tall knight came out, and challenged the new-comer to combat; but the place was enchanted ground, and the lady's sweetheart could not draw his sword. The knight of the castle dragged him from the saddle like a child, and carried him into the castle, a prisoner. When the lady ran to her lover's aid she was knocked down by a buffet on the face.

"Go," cried the churlish knight, "go to Carlisle and ask vengeance from King Arthur. Tell him many of his knights are rotting in my dungeon now, and if he dare venture in the shade of my castle he shall join them."

King Arthur leaped to his feet, and swore he would not taste food or drink again till he had fought this insolent knave.

At dawn next day he set off alone. The poor lady had told him how to find the castle, which stood on the heath by Tarn Wathelan. When King Arthur reached the place there was no sign of life. He drew his sword Excalibur and blew his bugle three times. Then he shouted:

"Come forth and fight, Knight of the Castle! King Arthur has come to punish you for your crimes."

Instantly the door of the castle opened, and the enchantment fell on the King. Excalibur clattered to the ground from his helpless hand, the reins dropped on his horse's neck. The knight of the castle came out, swinging his great club.

"You are my prisoner, King," he said, "but I will give you one chance of ransoming yourself. Swear by the Rood to return in a year's time and tell me *what thing it is that all women most desire*, and I will let you go now."

King Arthur, his head bowed in shame, vowed to return. The knight went in, and strength again returned to the King.

Mournfully he rode away, but not to Carlisle. He gave a shepherd some gold, and bade him take a message to Queen Guinevere to say that he was going on a long journey. Then he rode north and south, east and west, asking every woman he met the knight's riddle.

Nearly every one made a different answer, according to whether they were religious or worldly, proud or loving, covetous or charitable. The King wrote down all the answers, but he did not know which of them was right, and he grew more miserable every day as the seasons sped, and Christmas drew near.

It was a sad man who rode through the snow-clad woods toward the enchanted castle. All at once he saw a patch of crimson through the trees. A woman sat between an oak and a holly. The King drew near to ask his riddle, but when he saw the face of the woman in the red gown his heart turned cold, fearing she was a witch. She had one bleary eye, ragged grey hair, a crooked nose, a long mouth which showed stumps of teeth, a nut-cracker chin, and withered cheeks.

"All hail, King Arthur!" she cried. "Would you like to know what thing it is that all women most desire?"

The King was quite certain now that she was a witch.

"I will tell you and save your life" said the old hag, "if you promise to find me a brave, courteous, and handsome husband from the knights of your Court."

King Arthur promised, for he was fain to live on in the light of the Sun and to see his wife and home again. The old woman gave him the answer. Then he rode on to the castle by Tarn Wathelan, and sounded his bugle. The knight came out, swinging the keys of his dungeon.

"Well!" he asked, "what is it that all women most desire in the world?"

"Their own way," replied the King.

At this the knight gave a cry of wrath. "You are ransomed," he cried, "but some witch has helped you to find the answer, and she shall burn for it."

King Arthur hastened back to Carlisle, where he was met with great rejoicings. But he would not speak of his absence, and was heavy at heart. At last his nephew Sir Gawain drew him to one side and begged to know the cause of the King's sorrow. When he had heard the story he said: "But why are you mournful, Uncle?"

"Because I cannot keep my promise to the old woman," said the King. "No one would marry her."

"I will if no one else will," said Gawain; "you shall not be dishonoured."

The King thanked him heartily. Next day he called for a hunting party, and led them to the wood near Tarn Wathelan. As uncle and nephew rode through the woods they suddenly heard shouts of laughter from some knights were on ahead. They hastened up, and found Sir Kaye and a few others jeering at the old woman in the crimson robe sitting between the holly and the oak.

"By my fay," cried Sir Kaye, "here is a pretty wood nymph! Here is a damsel to set all the shepherds' hearts aching!"

"Do not mock this woman," said the King; "she saved my life, and I am pledged to grant her a boon. Which of my knights will redeem my promise and marry her?"

One and all drew back muttering, "She is eighty years old," "She is lame," "She is humpbacked." The old woman began to weep at their scorn and loathing. Then Gawain knelt and asked her to be his bride. She smiled at him with her dreadful mouth, and said, "Noblest of knights, heaven will reward your chivalry."

The company rode back to Carlisle, Gawain bearing the old hag in front of him on his horse.

Guinevere was her lady-in-waiting at the bridal, and Arthur was the groomsman. There was a great feast, and afterwards the bridal pair led the dance. Gawain's grace and courtesy made men

sigh as he guided the limping old crone through the stately measure. At length the bridesmaids led her away to rest. Gawain sat mournfully among the revelers, who dared not mock his wife aloud, but whispered many a cruel jest about her behind his back.

Presently Gawain went to his wife's room. She was sitting by the fire. As Gawain entered a log fell, the flame blazed up, and he saw a beautiful young maiden. As he gazed, speechless, she said:

"You are silent, husband, at the sight of your own work. My stepmother, who is a witch, cast an enchantment upon me, which by your chivalry is half broken. Henceforth I may be myself, either by day or by night, and an old hag the rest of the time. Choose which it shall be."

Gawain thought at first that he would like her to be beautiful in the daytime, at tournaments and hawking parties; afterwards he thought he would like her to be beautiful by torchlight, when the minstrels sang, and kinsmen gathered round the fire. But at last he said: "Choose thyself; thou hast the right, and thou art wiser than I."

At this she clapped her hands and cried: "Now is the enchantment quite broken, and I shall be myself for evermore!"

So King Arthur was ransomed, Sir Gawain won a lovely wife, and the lady had her own way.

HERO AND LEANDER

WHEN Hero was a little golden-haired girl her parents dedicated her to be a priestess in the temple of Venus at Sestus. There she grew up, very lovely, and content with her solemn duties.

But one day she noticed among the worshippers a dark and handsome youth who looked a king among athletes. She learned that his name was Leander, and that he dwelled across the strait, in Abydos. After that Leander often came with offerings for the shrine, and they fell in love. Then, for the first time, Hero understood how her parents had wronged her in childhood. She was bound to her service in the temple. She could not marry. If she were suspected of loving Leander she would suffer a terrible death.

Yet the young lovers could not live without even speaking to each other. At nightfall Leander would swim the Hellespont, while Hero held a torch on the shore

to guide him. Every night they would sit in the lee of the rocks, talking of their separate lives. None knew of these secret meetings save one friend of Leander's.

A stormy night came. The sea ran high. No other man would have attempted the crossing, but Hero saw a lantern waved three times on the opposite shore and she knew Leander was coming to her. She lit her torch, and in the hours that followed she had to relight it often, for the tempest grew more and more boisterous. Drenched to the skin and agonised with suspense, she watched the white foam tops of that black sea all through the night. Leander never came.

She tried to think that, finding the sea too rough, he had wisely turned back to Abydos, but soon news was brought that his dead body had been washed up. Then Hero ran to the highest cliff near Sestus and flung herself into the sea.

THE LEGENDS OF CHARLEMAGNE

A great number of legends grew up in the Middle Ages around the mighty figure of Charlemagne, the famous emperor whose fame spread to all parts of the known world about the end of the ninth century. We read of him on page 2521. Here we give a few of these stories which were once so well known.

HOW ROLAND GOT HIS COAT-OF-ARMS

THE most famous of all the paladins, the knightly champions of Charlemagne, was Roland, Shakespeare's Child Roland, who to the dark tower came.

He was the son of a very great knight related to the Emperor, but, having married Charlemagne's sister secretly, the knight was banished from France, and wandered as a beggar, with his wife, until he came to Sutri, in Italy. There the couple were too poor to have a home, so they took refuge in a cave, and it was in this cave that Roland was born.

He was a fine boy, stronger than any of the other boys in the district, and he had many knightly graces; but his parents were so poor that he never had enough clothes and was often hungry.

He was a great favourite with all the boys around, and though he had thrashed Oliver, the son of the governor of the town, in a boyish quarrel, they became close companions, and their friendship lasted through life.

One day four boys, knowing how ill-clad poor Roland was, took pity on him and brought him some cloth. Two brought white cloth and two red, and when Roland became a famous knight, and acquired a coat-of-arms, he remembered the kindness of his boy friends, and had his coat made with quarterings of red and white as a reminder of their kind act.

THE EMPEROR'S DINNER

ROLAND, when a boy, was very distressed when he saw his parents hungry, and one day when his mother had had nothing to eat, he heard that Charlemagne, who was on his way to Rome, was dining in public at Sutri.

He went to the place of banqueting, and there saw a right royal feast, with more food than the party could ever consume.

"Why should not my mother have some of this?" he thought; "she is of royal birth;" and without any further hesitation he rushed upon the party, and, quickly seizing as much food as he could carry, ran off with it to the cave.

Charlemagne ordered three knights to follow the boy, who, when they were about to enter the cave, would have cudgelled them had not his mother restrained him.

The knights, learning who she was, promised to obtain her pardon from the Emperor, and this they speedily did.

Roland was received into favour and returned with Charlemagne to France, where he very soon became the most powerful supporter of the throne and one of the greatest champions of Christendom.

ROLAND DEFEATS THE GIANT

THE giant Ferragus was of enormous strength, with a skin so tough that no sword could penetrate it. That was why the Christian knights feared him, for he used to seize his adversaries and bear them off in his arms; and, no matter how true their steel, they could never manage to wound him.

Roland, for all his skill, could only just keep out of the giant's clutches, and when after long fighting Ferragus grew weary, and offered a truce, it was agreed to.

The giant lay down on the ground and fell asleep, and, of course, no Christian knight would take advantage of him then, for the laws of chivalry were very strict. Roland saw how uncomfortably the giant lay for lack of a pillow, so, taking pity on him, he found a smooth stone and placed it under the sleeper's head.

After a time Ferragus woke up, greatly refreshed by his sleep. Then, seeing what Roland had done for him, he became sociable, though still very boastful, and told how every part of his body was invulnerable except the middle of the breast.

Soon the truce was up, and the fighting was resumed, when Roland, remembering what he had learned, pierced the giant in his vulnerable spot.

Great was the joy of the Christian warriors when they saw that their powerful foe was dead.

A ROLAND FOR AN OLIVER

GUÉRIN DE MONTGLAVE, the lord of Vienne, quarrelled with Charlemagne, and war broke out between them. But as Marsilius, the King of Spain, was advancing to invade France, Charlemagne agreed to decide the quarrel with Guérin by means of single combat between two knights, one being selected by each side.

Guérin was an old man, but when a knight was to be chosen by lot to champion

his cause he had his name put with those of his sons and grandsons into a helmet. The name drawn was that of Oliver, and on Charlemagne's side Roland was chosen.

Fully armed, the two men met on an island in the Rhone, and neither knew who the other was. At the first onset both lances were broken, so the warriors dismounted and fought with swords. Never had such a fight been seen. For two hours or more the knights battled fiercely, neither showing any signs of weariness, but at last Roland struck Oliver's shield so furiously that his trusty sword Durindana was buried in it, and could not be withdrawn. At the same moment Oliver thrust with so much vigour at Roland's breastplate that the blade snapped off short at the handle.

Then, weaponless, the two brave men rushed together, and each tore off the other's helmet. Their amazement was great when they recognised one another, and for some moments neither could move. The next moment they ran into one another's arms, Roland crying, "I am conquered," and Oliver at the same moment crying out, "I yield."

The other knights crowded round and acclaimed them equals in bravery and glory, and ever since to give a Roland for an Oliver has meant a contest in which the give and take is equal.

Soon after Charlemagne's quarrel with Guérin was settled, and the Emperor was then at liberty to march against Marsilius.

HOW RINALDO CONQUERED BAYARD

RINALDO, or Renaud, was the cousin of Roland, whose exploits he longed to rival. On the day that his uncle, the Emperor, gave him the honour of knighthood, he vowed that he would never wear a sword till he had wrested one from some famous knight.

But first of all he must have a horse, and he determined that he would conquer the famous steed Bayard, which was formerly owned by Amadis of Gaul, but was now running at large in the Forest of Arden, wild and untamed.

To attack this horse men said meant certain death, but Rinaldo plunged bravely into the forest, where he met and fought a Saracen knight named Isolier. Rinaldo proved the better man, but when they were about to renew the combat a peasant ran forward to say that Bayard was near.

The two knights became friends, and determined to meet the fierce horse together. Bayard came rushing through the forest, and first attacked Isolier, who received him on his lance; but the spear snapped in two. Then the knight drew his sword and struck at the horse. But he did not know that the animal's skin was too tough for the keenest sword to make any impression upon. At last the terrible horse ran at the Saracen knight, who fell to the ground lifeless.

Rinaldo's turn had now come, and for a long time a fierce fight went on between knight and horse, neither gaining any advantage. But by chance Bayard's hoof was caught between the branches of an oak, and, seizing his opportunity, Rinaldo sprang forward, put forth all his strength, and hurled the horse to the ground.

Directly Bayard touched the ground his rage subsided, and he became gentle and quiet. Then Rinaldo stroked him, and, putting a saddle upon his back, rode back on him to Charlemagne's Court, where he became a great and famous paladin.

THE WATERS OF OBLIVION

ROLAND, having fallen in love with Angelica, the beautiful daughter of the King of Cathay, whom he had once found sleeping in a field of lilies and roses, went to her father's Court in search of her. Leaving Charlemagne's camp, he travelled long in the direction of the East, making inquiries everywhere, but all in vain.

One day he arrived at a bridge under which flowed a foaming river, and there a maiden met him and offered him a goblet of the sparkling water. She told him it was the custom for all travellers to drink of the waters of the river, and Roland thereupon tossed off the cup. But no sooner had he done so than he became dizzy, and, forgetting the object of his journey, followed the maiden into a magnificent palace, where there were many other knights gathered together.

These, like Roland, had all drunk of the Cup of Oblivion which had been offered them by the maiden at the bridge, and had completely forgotten their quests.

Roland might have remained in the palace for ever had not Angelica found her way thither, and, by means of a magic ring, disenchanted him and the other knights, so that they all regained their memories and continued their journeys.

THE WASPS

This is the story of one of the plays of Aristophanes, the famous dramatist of ancient Greece.

BDELYCLEON was a fashionable youth whose father was a great trial to him. Instead of leading a life of dignified ease, devoted to art and learning, as he should have done, Philocleon spent all day and every day in the law courts.

He was one of the dicasts whose votes, in the shape of shells, were cast either into the death urn or the mercy urn, and decided the defendant's fate.

For their services the dicasts were paid three obols each. They loved their importance, the prayers of relatives who thronged the gates begging for mercy, and the fear they inspired. Most of them were of a vindictive nature, and The Wasps was no bad name for them.

At length Philocleon's love of law suits became a mania. He was shabby in his dress, restless in his sleep, and never at home from one year's end to another. To save him from becoming a laughing-stock his son locked him up, for argument was of no avail whatever. But Philocleon would jump out of windows and climb up

chimneys to escape, and then run back immediately to the law courts.

At length Bdelycleon hit upon the idea of turning his house into a court, and making his father judge. Two jars did duty for the urns of death and of mercy. A hurdle did for the judgment bar. Slaves were employed in getting up cases.

The first case Philocleon tried was one of stealing. Labes the mastiff was accused of eating a Sicilian cheese. His puppies were brought into court to move the judge to pity. A plate, a porringer, and a cheese-scraper were called for the defence. Labes's counsel described how faithfully he kept wolves and robbers from the door. He also pleaded youth, saying that Labes did not know the first rules of music, with which Greek education always began. All in vain; Philocleon would have him hanged. But he dropped his cockle-shell into the urn of mercy by mistake.

When the malicious old man discovered what a royal chance he had lost with his solitary supreme vote he fell into such a passion of rage that he was never known to speak of a law suit again.

TRIPTOLEMUS

ONE day the daughters of King Celeus saw an old woman weeping by the roadside. Their father had taught them to have compassionate hearts, so they asked her kindly what ailed her.

"My daughter has been stolen from me!" cried the old woman. "I have wandered far and wide to find her, and I think I shall never see her again."

"You are worn out with travelling," said the princesses. "Come back with us to Eleusis. After you have rested you will be stronger to continue your search. Besides, you may hear tidings of your daughter, for all tidings are sure to come to our father's house."

The old woman was touched by their kindness, and returned with them. Her sad story moved the queen to say. "She shall be my baby's nurse. In caring for him she will forget her own sorrow."

Triptolemus was the name of the little baby, who was a sickly weakling. His fretful wails ceased as soon as the old woman took him in her arms and kissed the little yellow face.

That night the queen lay awake. She began to upbraid herself for letting a

stranger have charge of her baby. She rose and stole quietly to the nursery.

There she saw a dreadful thing. The old woman was muttering charms over the baby, who lay on a brazier of burning coals.

The queen shrieked and snatched up her child, who was unharmed. When she looked from him to the nurse she saw a stately, golden-haired woman.

"I am a goddess," she said. "My name is Ceres. My daughter Proserpine has been stolen from me, and I seek her in disguise. For your kindness I would have made your son immortal. You have prevented me. But I shall not forget him."

Before the queen had recovered from her astonishment the tall stranger had gone.

Many years passed. Triptolemus grew up. Ceres discovered her daughter in King Pluto's underground kingdom. Then she returned to Eleusis, in her own guise, and said to the young prince: "Nursling, I will make you a blessing to the whole world if you will follow me to the plains."

There she taught him to plough, to sow, and to reap corn. She gave him a great store of the precious grain, and lent him her magic chariot, so that he might

travel round the world teaching all people how to grow and use corn.

Imagine the difference this knowledge made to mankind. Instead of living by hunting alone, it was now possible to lay in a store against the winter days when there were no fruits, rivers were frozen, and beasts were curled up for their winter sleep. No wonder that there is a corn legend in every mythology, describing its discovery as a gift from the gods.

Triptolemus was honoured and blessed everywhere; but the King of Scythia was jealous of his renown, and determined to murder him. Accordingly he invited Triptolemus to stay in his palace and tell him more about this wonderful corn.

When everyone was asleep Lyncus, the king, stole toward his guest's room, sword

in hand. He knew no slave would consent to strike the benefactor. But suddenly Lyncus dropped the sword and fell on hands and knees. A queer anguish seized him. Fur sprang on his limbs. He was turned into a lynx. Terrified of being killed by his own guards, the traitor king fled into the wilderness. A lynx has typified treachery ever since.

When Triptolemus had travelled all over the world he gave back the chariot, and settled down at Eleusis. He inaugurated festivals there in honour of Ceres, the goddess of harvests, and her daughter Proserpine, the spring.

The Eleusinian festivals became famous, and continued to be celebrated for hundreds of years, long after the age of dim legends had given place to the age of history.

HOW THE TRAIN WAS SAVED

IN a wild part of Western Virginia lived a poor old widow in a roughly-made log hut on the edge of a chasm, miles away from any neighbours.

The Baltimore and Ohio Railway had its track close by, and ran across a wooden bridge over the yawning chasm.

One windy day in March the snows were melting on the mountain heights, and the river that flowed through the gorge was filled with an icy flood of melted snow. As the day lengthened the waters grew noisier, and their ceaseless roar made the old woman and her daughter uneasy. They went to bed at last in fear and trembling.

About midnight a crash caused them to start up in terror. Clinging to each other, they crept down to the edge of the gorge, and found the bridge broken to pieces.

No sooner had the old woman realised what had happened than the awful thought came to her that the night mail would be due in half an hour. There was no one, no signal-box, no telegraph, to warn the approaching train of the terrible danger that lay before it.

Was there nothing she could do? There was one thing—a light! The driver would see a light, though shouts would seem no more than a faint whisper in the roar of the raging wind. But where was she to get a light? In the hut she had but half a candle, and if she took that on to the line the rain and wind would put out the light directly. In her poverty she had neither lamp nor lantern.

Searching anxiously round the little hut, her eyes rested on the wooden bedstead and two wooden chairs, dry and old.

With trembling and eager hands the women chopped and cut at the bedstead until it lay on the floor in pieces; then, carrying these in their arms, they climbed on to the line, and piled up the wood in the middle of the track.

Shielding a match from the wind, the old woman struck it and put it to the pile of furniture. To her joy, this caught light; just in time, for as it began to blaze up the rumble of the train could be heard.

How eagerly mother and daughter watched that burning pile, hoping and praying that the engine-driver would see it in time to stop the train! The mother took off the red skirt she wore, tied it to a stick, and hurried up the line, waving it about in the light from the fire, while the daughter flourished a burning post.

Nearer and nearer came the roar of the train; it was rounding the curve; they could see the light in front of the engine. Then gradually the train slowed down, and came to a stop close to the blazing pile.

The driver's keen eyes, accustomed to see far ahead, discovered the dangerous chasm and the empty space where there should have been a bridge; and as his eyes travelled to the burning furniture and the figures of the old woman and her daughter he recognised the act of courageous self-sacrifice that had come from a brave heart.

BELLEROPHON AND THE WINGED HORSE

BELLEROPHON came to the Court of King Iobates of Lycia with a letter from the king's kinsman Proetus. The youth thought that it was a letter of recommendation, but Proetus was jealous of Bellerophon, and had written asking Iobates to have him killed for a crime which, in truth, he had never committed.

Iobates looked up from the letter at the stranger's frank face and fearless bearing. The king thought: "He does not look a scoundrel. If he must die it shall not be by the rope or the assassin's dagger. He shall die in open fight."

He made Bellerophon welcome as though the letter had indeed been one of friendly praise from Proetus. But that night he began to talk of courage.

"There are no heroes today," said the king; "all men are cowards, in spite of their fine armour and strutting airs."

Bellerophon flushed, and said, "My lord, I am no hero, but no one has the right to call me a coward."

"But you would not fight the Chimera, for all your brave words," said the king.

"I will fight him, whoever he may be," cried the youth.

"You have promised," said Iobates, "but you will break your promise when I tell you that the Chimera is a horrible monster who lives on a burning mountain, and has killed every warrior I have sent to destroy him."

"I will go to his lair tomorrow, even if there should be twenty of the brood!" declared Bellerophon.

Iobates knew that Bellerophon would be killed, and that Proetus would have his desire; but the king was sorry, for Bellerophon seemed to him a modest, brave man, such as he would have had for a son.

Next day Bellerophon set off with a little store of provisions and his armour. He had a short journey to make before he reached the burning mountain. As he went along he thought of the stories that he had been told about the Chimera. It seemed an invincible monster, but Bellerophon would rather have perished than have let Iobates mock at his courage.

At length he came to a place where he could see the burning mountain sending up rosy smoke above the trees which clothed its sides. He put on his armour, and bent to drink at a brook, perhaps for the last time. When he lifted his eyes he saw a tall and glorious woman standing

on the opposite bank, holding a great winged horse by the bridle. From her helmet and spear he knew she was the goddess Minerva.

"Brave youth," she said, "you shall not perish in an unequal contest. The gods lend you this horse, whose name is Pegasus. He will bear you to victory."

She put the reins into Bellerophon's hands, and vanished. He leaped on to his winged steed, who sailed into the air, and bore him to the Chimera's cave.

This monster had the fore-parts of a gigantic lion, and ended like a scaly dragon. Its swift pounces, terrible talons, and fiery breath would soon have destroyed Bellerophon if Pegasus had not wheeled and darted just out of the creature's reach, returning to let his master thrust his sword at its tough hide. After a struggle it was slain. Bellerophon urged Pegasus into the air, and flew to Lycia.

Everyone ran out to behold the winged horse flying over the house-tops, and when Iobates saw who rode it he cried: "Bellerophon was innocent. Proetus lied. The gods have aided him."

Bellerophon dismounted at the palace steps, but he kept a firm hold of the reins. After he had told Iobates that the Chimera was dead, he took Pegasus to the stables and tied up the horse.

There was a feast at the palace that night, and Iobates bade his courtiers drink to Bellerophon, the betrothed of the Princess, and heir to the crown of Lycia.

The youth ought to have been contented with such wonderful fortune, but Bellerophon dreamed of a greater achievement. Mounted on Pegasus he would fly to heaven and see the gods face to face.

One day he led the steed from its stall, mounted, and turned its head skyward.

But the gods were displeased with Bellerophon for having kept Pegasus after the Chimera was slain, and for dreaming of invading the sky. They sent a fly to sting Pegasus. He plunged violently at the pain, and flung his rider.

Bellerophon was not killed by the fall, but stunned. When he recovered consciousness he found he was in a dreary country which was almost a desert. There, among savages, he spent the rest of his life, unable to return to Lycia.

When heaven lends us wings (poetry, music, painting, and sculpture are gifts like that) we must use them reverently.

MY LORD BAG-OF-RICE

HIDESATO, a Japanese hero, as brave as any knight of King Arthur's Court, was one day wandering about in search of adventure when he came to a lovely lake at the foot of a mountain.

It was crossed by a bridge, but on that bridge a hideous dragon lay asleep. Hidesato feared nothing, so he clambered over the dragon's scaly coils, and was going on when he heard a voice calling: "My lord! My lord!"

Hidesato looked round. The dragon had vanished from the bridge, and in its place there stood a handsomely-dressed man with red hair, who wore a flashing crown.

"I have just proved that you are a brave man," said he, "now I beseech you to help me against my enemy."

"If your enemy be an evil person I will fight him," said Hidesato, "for that is the duty of a knight. But who are you?"

"I am the King of the Lake," said the stranger. "My enemy is a monstrous centipede, half a mile long, and as thick as the biggest tree in the world. His skin is as tough as steel. Every night he comes down into the lake and carries off one of my people. Yesterday he took away my favourite child."

"If he does not slay me I will slay him," said Hidesato.

The King of the Lake thanked him joyfully, and bade him come to the palace beneath the water. Hidesato followed his host boldly. He found a beautiful flowery country under the lake. The palace was of crystal, furnished with gold and ebony. While they feasted, ten goldfish played the lute and ten carp danced to amuse the guests. But all at once the merriment was interrupted by a rumbling like thunder. Everyone except Hidesato grew silent and trembled. With

white lips the King of the Lake whispered: "My enemy is coming!"

"Take me to the bridge," said Hidesato.

As soon as they reached the surface he saw a dreadful sight. Down the mountain came the monster, lighting up the whole scene with its fiery eyes.

Hidesato had three arrows. He drew his bow. The first arrow struck the centipede's head and glanced off. The same thing happened with the second. Then he remembered that his grandmother had told him human saliva was as deadly to dragons as a snake's venom is to mortals. Hidesato moistened the tip of the last arrow in his mouth, and drew the bow again. It pierced the monster's brain. Over and over it rolled, down into the lake, which was churned into a storm as the creature thrashed about in its death agony.

No words can describe the joy and gratitude of the Lake people. They drew Hidesato down to their palace, and begged him to stay for ever; but he vowed that a knight must not sit feasting while the world is full of wrongs that need righting.

When they saw he would not stay they let him go, but sent a retinue of servants to escort him to the nearest town. They were goldfish till they rose to the surface of the lake. When Hidesato reached the town they laid three parcels before him, bowed, and vanished.

In the first parcel was a roll of silk which never grew less, however much was cut off. In the second there was a cooking pot which boiled without fire. In the third there was a bag of rice which could not be emptied. Hidesato was thus enabled to clothe the naked and feed the hungry wherever he went.

Because of the magical bag the poor folks called him "My Lord Bag-of-Rice."

THE MAN IN THE ENGINE-ROOM

ONE of our poets began his first book of verse by saying that he would write of the great deeds of nameless men:

Not the be-medalled commander, beloved of the throne,
But the lads who carried the koppie and cannot be known.

Of such is an unnamed chief petty officer of the light cruiser Calliope. The warship had left behind the lights of the Cornish coast on her way to the Azores when, in the black midnight, a pipe burst

in the engine-room and escaping oil set the ship ablaze. The danger of the boiler and magazines exploding was extreme.

But the Calliope has a name honoured in the history of the Navy, and well was it sustained by the chief petty officer on that day. Alone he went down into the engine-room and turned on a steam-pipe that averted the danger; and presently the Calliope, flooded and crippled, crept back to Plymouth, the fire extinguished, and a new laurel in her crown of fame.

THE STOLEN BELL

BENKEI was not only the strongest man in Japan but, except for Hercules, the strongest in the whole world.

He was at first a monk, though he was not much suited for a religious life. Indeed, he used to go to a narrow gorge, put on black armour, and challenge all comers to fight. He kept the swords of those he vanquished, and had nearly a thousand when one day the hero Yoshitsune came and defeated him.

After that Benkei became the hero's faithful squire, and followed him round the land doing knightly deeds. But let us go back to Benkei's early days, when he was a young monk.

Not far away stood the temple of Miidera, which possessed a very fine and large bronze bell. One night Benkei set off over hill and dale to Miidera, broke into the belfry unobserved, and lifted down the bell. He next took down the crossbeam, hung the huge bell on one end and his paper lantern on the other, and marched back to his own monastery.

When he had hung up the bell he woke his fellow monks, and proudly showed them the new possession. They

were delighted. One of them pulled the bell-rope and the bell moaned:

"I want to go back to Miidera!"

Benkei's jaw dropped. However, the other monks were as dishonest as he was, and even when they knew the bell was stolen they determined to keep it.

"Soon it will get used to its new home," they said hopefully.

They used to praise it loudly, and only pull the rope gently; but it always sobbed out: "I want to go back to Miidera!"

At last Benkei lost patience. He seized a bar of iron and dealt the bell a huge blow, meaning to shatter it. The bell only roared out, so that it could be heard for miles: "I want to go back to Miidera!"

Then Benkei unhooked the bell and carried it to the door of the monastery, which stood on a hill. There Benkei gave it a tremendous kick. Off it bounded, chattering and ringing, bounding up hill and rolling down dale, till at last it reached the temple gates of Miidera.

There it was warmly welcomed, and hung in its own belfry, where it never spoke anything but bell-language for the rest of its days.

ECHO AND NARCISSUS

EARTH and Air once had a daughter who was called Echo.

She was a beautiful, gay, talkative nymph, and was one of Juno's hand-maidens in the skyey palace of the gods. Soon, however, Juno found that her pretty favourite was such a gossip that she babbled out the most important and secret matters. Jupiter was angry and sent her away to live on Earth. Lest her tongue should do harm there, as it had done in the Cloud Court, he decreed that she should only be able to repeat what others said.

At first Echo was happy enough in the lovely woods of Greece. She found beings like herself there, tree-spirits called Dryads, and the great Pan, with shaggy legs and cloven hoofs, but a sweet voice and music-making hands. He was the lord of all wild birds and beasts. He cared for straying lambs or kids. He blessed the poor man's garden and byre.

This wood god loved Echo, but she turned from his ugliness in scorn. His sad piping, as he sat apart from the dancing rout, could not touch her heart. She was gay, though her tongue was tied.

One day, however, Echo was stricken by the same sorrow as Pan. She heard a horn in the woods, and peeped through the bushes. A young huntsman called Narcissus was calling his dogs. He was as beautiful as a girl, though he did not know it, for he had never seen a mirror.

Echo fell in love with him. She came out of the bushes, but she could not speak, except to echo his words, and he would not speak to her. He turned from the stranger to seek his dog. She followed, through bog and thicket. The huntsman grew angry, and said: "What do you want?"

Echo repeated his words.

"I have no money, beggar-woman. Do not follow me," cried Narcissus.

Echo, who longed to ask to be a servant in his house, could only say, "Do not follow me!"

"You are mad. Go away!"

"Go away!" echoed the nymph.

At last the bewildered huntsman grew so harsh and threatening that she fled away into a cavern, where she mourned till nothing was left of her but a voice.

Venus was sorry for the nymph, and determined to avenge her.

One hot summer day Narcissus was led by a flying hart to the very cavern where Echo had died. It had been a long chase, and when the huntsman had slain his quarry he was glad to notice a still pool of water near by. As he bent to drink he saw a lovely face in the pool. He did not know it was his own reflection, but thought he had seen a water-nymph. Straightway he loved her, and tried to drag her from the depths. But she disappeared at once in the troubled water.

Narcissus withdrew, hoping that when all was still she might conquer her fear and leave the pool. After a time he tip-toed back. The image smiled up at him. He began to woo her gently.

"Timid spirit," he said, "do not fear me. I love you!"

A faint voice echoed "I love you!"

"Then leave your pool, and be my wife," said the huntsman. "My father

has flocks and herds and a fine house. You should have soft apparel and gold ornaments. You should have all you desire. I will love no other."

"I will love no other!" sighed Echo.

"Then come!" coaxed Narcissus.

"Come!" mocked Echo.

But when Narcissus again tried to seize the lovely face, once more it disappeared.

By sunlight and moonlight he watched and pleaded, while the image smiled and answered his love vows. Yet she would not come to him.

Narcissus thought she was imprisoned by some enchantment, and at length, worn out by fasting and despair, he died.

When Venus saw his body she turned him into the flower we call Narcissus. Every spring it stands by the pool, gazing at its own reflection till it pines to death. But next year it will rise to love and sorrow all over again. Echo haunts the cave to this day.

SISTER DORA AND THE TOILERS OF WALSALL

IN the little village of Hauxwell, in Yorkshire, was born in 1832 a girl named Dorothy Pattison, who in later life, when working as a nurse in Walsall, became known as Sister Dora.

She was a bonnie, merry girl who much liked to get her own way, and, growing restless in the little country village where her home was, longed to go with Florence Nightingale to the Crimea.

She was not then trained for nursing, and her father would not consent to her going, so she stayed at home and taught the village children. But she soon found her life-work in nursing and caring for sick people. She seemed to bear a charmed life, to have strength more than human, and her courage, self-sacrifice, and devotion to all who needed her help made her life one long golden deed.

In 1864 Sister Dora joined the Sisterhood of the Good Samaritan at Coatham, in Yorkshire, and the experience she thus gained in nursing poor people and taking interest in their needs was very helpful to her in her future hospital work.

Where pain and misery were, there was Sister Dora to help and cheer. When a worker in a coal-mine met with an accident, and the surgeon at her hospital wanted to cut off his right arm, it was

Sister Dora who pleaded to be allowed to try to save it. She did save it, too, and the grateful man used afterwards to walk eleven miles every Sunday to ring the hospital bell with that arm, and inquire about Sister Dora when she was lying ill herself.

When smallpox broke out in the town, Sister Dora spent her hours of rest in nursing in their own homes those who had none to care for them. For six months she battled with disease and death almost single-handed, herself putting sufferers into the ambulances and taking them away to be nursed, struggling with delirious patients and mothering tenderly every sick child.

And with all her ceaseless work and untiring energy she was so strong, merry, and full of fun, that she *made* her patients want to get well; as one of them said, "She'd make you laugh if you were dying." No one could be gloomy or hopeless when looking on her face.

Far too soon Sister Dora had spent all her strength for others; yet, true to her noble nature, she worked to the end, keeping her own suffering hidden from those around, and passing from one bed to another with her soothing touch, her cheery word, and her loving smile.

Nature's Wonderful Living Family in Earth and Air and Sea



Earthworms and their casts

THE WONDERFUL WORK OF A WORM

WE are all on the side of Cowper and Darwin now; of Cowper the worm's poet-friend, of Darwin the worm's historian.

Says our gentle poet:

I would not enter on my list of friends
 (Though graced with polished manners and
 fine sense,
 Yet wanting sensibility) the man
 Who needlessly sets foot upon a worm.

That gives the worm a title to respectability in poetry where, throughout the ages, he has been a much abused, much misunderstood little fellow. To Darwin, and to the followers he inspired, the worm owes its vindication as the first of husbandmen, who ploughed before Adam, and long before man tilled the soil prepared it for his coming.

What an unmerited reputation for evil the worm has had to live down! If any creature were evil, men called it a worm, and posterity asked for no further evidence of its villainy.

Forty times and more Shakespeare slanders this poor tenant of the earth, as the worker of mischief, or as the symbol of misdoing and fatal melancholy. Vile worm, poor worm, viperous worm, gnawing worm, eyeless venomous worm, worm of the Nile (which means a snake), there is no goodness in the worm, the worm is

not to be trusted—so runs the master's pen.

Shakespeare was clear-eyed and accurate in all things he observed at first hand, but he took the worm's character at second hand, and lo, it was very bad. The standard books on natural history available to him asserted that worms "be full evil and malicious; some be footless, and some have six feet and be enemies to mankind."

Yet out of the very wickedness of worms men were to distil anti-toxins against "shrinking of sinews and biting of serpents and scorpions." Also, if the armourer stamped upon worms, strained them through cloth, then added an equal quantity of oil of radish-roots, and used the mixture in the making of swords or daggers, "the same shall cut through iron after, as though it were lead."

The Church was equally emphatic about worms. There still survives the charge, drawn up by the martyr Trypho of Lampsacus, wherein, addressing worms and various insects he says:

O ye worms, and all other creatures that cling to and wither the fruit of the grape and all other herbs, I charge you by the many-eyed Cherubim and by the six-winged Seraphim, which fly round the Throne, and by the holy Angel and all the Powers, hurt not the vines, nor the land, nor the fruit trees, nor the vegetables of ————, the servant of the Lord, but

depart into the wild mountains, into the unfruitful woods, in which God hath given you your daily food.

Truly the harmless, necessary worm needed a Cowper and deserved a Darwin, the one to bespeak its life, the other to trumpet forth its manifold virtues.

"If I but *see* a worm, I have no appetite for the next three days," said a lady once, not realising that but for worms there would be little food to satisfy her appetite. How does this boneless, limbless creature discharge its great service to the Earth, to vegetation, and so to all animals and to ourselves who depend on them? It is a living mill, grinding up soil day and night, reducing the mountains of other eras, with the verdure and carrion of yesterday, to the fine compost from which all plant life springs and grows.

THE ASTONISHING DIGESTIVE SYSTEM OF A WORM IN THE EARTH

Its body is segmented, ringed throughout, and through the interior of that long body runs the astonishing digestive system. The thin, pointed end of the worm is the head, bearing the mouth, which has neither jaws nor teeth, but a lip for grasping. A muscular sac, called the pharynx, leading to the gullet, or food-canal, is responsible for suction to aid in taking in food. The matter eaten, as it passes down the gullet, comes in contact with glands, not found in any other animal, which secrete a large quantity of carbonate of lime and aid in the breaking-down process by which the food is reduced to digestibility.

From the crop to the gizzard the meal progresses, and, arrived in this powerful mill, it undergoes a grinding similar to that to which the food of a bird is subject. In the gizzard, as we should expect, are numerous small stones, varying between one-twentieth and one-tenth of an inch in diameter. Many small stones must be swallowed with the earthy material absorbed in the ordinary act of feeding, but a battery of stones is maintained here for the purpose of grinding; they are, in fact, the millstones of the miller of the soil.

Having been revolved and ground in the gizzard, the food passes on into the long food canal beyond. This organ is richly supplied with mechanism for the absorption of nutriment. When all goodness which can be extracted has been obtained, the residue passes on and is expelled from the worm's body, and issues from the

opening of its burrow in what we all know as wormcasts. These casts, if lightly swept over the dry lawn, form the best dressing the turf can have.

The worm has no eyes, but it has quick-acting sense-organs. It can detect the difference between light and dark. It never shows itself in bright daylight unless it is frightened from its hole, or unless it is sick and ailing, or threatened by the flooding of its dwelling.

HOW THE WORM PREPARES FOR ITS FUTURE GENERATIONS

With no nose, it can smell; with no ears, it can detect vibrations. It breathes through its skin; it feels heat and cold, it is keenly sensitive to contact; it displays a decided sense of taste in the selection of its food, showing preferences for various types of vegetation over other kinds, choosing the fat of flesh before the lean, and liking fresh meat better than foul, though not disdaining to eat the bodies of its dead kind when they are left to cumber the ground about its burrow and so to threaten corruption and danger.

The thickened ring of lighter colour than the rest of the body near the head is not, as may be supposed, the scar of an injury; it marks the presence of a gland from which is poured out the fluid composing the cocoon in which the eggs of the worm are laid. For even the lowly worm has, implanted within it, the sense of duty to its posterity.

Eggs so laid produce little worms resembling their parents in all but size; there is none of the wonderful changes of form such as mark the career of the insects. It is not true that if a worm be cut in halves and we apply the head to the tail the two parts will unite, though this belief is widespread. It is true, however, that if a worm is halved, the tail portion will produce a new head, the head portion a new tail, and so two worms will appear where one lived before.

THE REMARKABLE BODY OF A WORM AND ITS POWER OF BURROWING

It is the nature of a worm to writhe and wriggle in order to escape, but seeing that a mere touch or even a puff of air is terrifying to them, we should give them the benefit of the doubt, respect their possible pains, and remember the words of Cowper. So much, then, for the worm itself; let us proceed from this point to the work which made Darwin declare the

THE WONDERFUL WORK OF A WORM

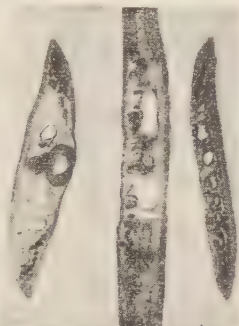
worm to be the most important animal in all the world.

The powerful cylindrical body of the worm is ideally fitted for burrowing. Its muscles endow it with thrust, and bristly appendages springing from the segments, like microscopic claws, increase its power

excavated while burrowing through the soil. The ordinary burrow runs a foot to a foot and a half in depth, though to escape frost or flood the worm goes far deeper, and exceptional burrows for normal life have been found between five and six feet in depth. In many directions it



Polygordius, a segmented worm



Magnified sections of Liver flukes



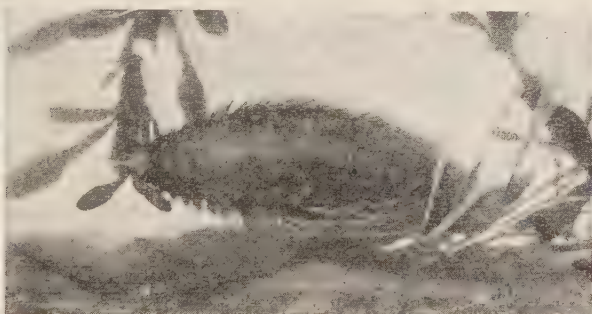
Tomopteris Marine Worm



The beaked Nais



A Bristleworm and its eggs



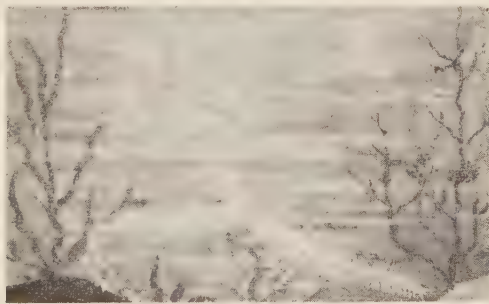
The Sea-Mouse, a marine worm common round the coasts of Britain



Chaetopterus, a marine phosphorescent worm



The Rock Leech



Myrianida, a sea worm

RELATIONS OF OUR FRIEND THE COMMON EARTHWORM

of locomotion. But the worm does not butt its way through the soil. It eats as it goes, and the head, obstructed by a stone, finds a way round; and there are few obstacles too difficult for its passage.

By absorbing the soil, the worm has a less difficult task than many animals whose ways we have followed, which have to throw out the matter which they have

tunnels, but, let us remember, it cannot do this without eating the soil. The soil itself is heavily charged with vegetable and mineral debris, and it is this which the worm extracts during the complicated process of digestion.

Doubtless there are properties in the soil which this little wonder of the underworld finds of value to it, notably for the

production of the carbonate of lime with which the acid of its food is attacked. The lug worm, which teems below high tide mark on our sandy coasts, eats sand in order to obtain organic remains washed down into it, and so helps materially to keep our beaches sweet and clean when the tide is out. The earthworm must sweeten our soil in the same manner, but that is not its primary value to us.

No matter how deep the worm goes, the process is always the same—the soil must be eaten before it can be cast out of the burrow. So the medium in which it works is continually being brought up to the surface, exposed to the air, freshened, fertilised by the absorption of atmospheric gases, and receiving new deposits of organic matter to enhance its fertility.

Now, as the earth which has been eaten is expelled from the end of the worm's body, and the wormcast is always brought to the surface, how can the worm manage to turn round in its almost straight cylindrical shaft? Turn it must, for we know that the normal attitude of the animal is head uppermost. We have but to go out on to the lawn with a lantern on a warm, dark evening to see the grass covered with worms, like an intricate lacework of life.

THE SWIFT RETREAT OF THE WORMS ON THE APPROACH OF DANGER

Rarely, however, do we find a worm free of its burrow. The tail end remains within the shaft, and a flash of direct light or the vibration caused by a footstep sends the worms down into their holes with amazing swiftness. Their retreat is like that of the startlingly sudden withdrawal of a tortoise's head into its shell.

Worms do roam about the surface; their tracks can be followed in many directions, but they are mostly found in the position indicated—heads out, tails at home. How, then, do they perform this marvellous somersault which enables them to bring the soil to the surface—how do they turn upside down in their tube?

The probability is that at the lower end of their perpendicular or obliquely descending shafts they nearly always have a more open chamber in the earth in which to perform this mystifying evolution. Such chambers have repeatedly been found, lined with stones of minute size, with seeds and other smooth substances. They have been regarded as the retreats

of the worm from great cold and equally deadly drought, but they must, one would think, serve this other necessary purpose of affording room to turn.

Whatever the method, the turn is performed, and out into the open comes the eaten soil, as fine as these living grinding mills can make it, the ideal potting mould. Not quite all of it is thus thrown out, however; a little remains in the shafts. The worm is a comfort-loving creature. Like the princess who wept with discomfort because there was a crumpled roseleaf under one of the many feather beds on which she lay, it must have ease and elegance in its lodging. It cannot bear a rough surface to its tunnel-lining.

THE LITTLE UNDERGROUND TUNNEL WITH ITS LINING OF CEMENT

To avoid this it lines the burrow with a cement of fluid mud, adding here and there smooth particles of stone and glass or whatever may be found on the surface, with particles of leaves and other vegetation, and smoothing all with a connecting clothing of moistened soil. As this hardens it becomes quite polished by the movement of the worm up and down, and so facilitates that swift withdrawal into the hole which we have noted.

In addition to eating earth and its contents, the worm banquets on dead leaves, fallen blossoms, seeds, and other vegetable substances lying near the mouth of its burrow. With instinctive genius it draws the leaves down its hole in such a manner that the small end always goes first, so taking the line of least resistance.

Many of these leaves and other substances it eats; many, or parts of many, it leaves to decay and form new material for the regeneration of the soil.

THE LOWLY WORM AND THE SPLENDID WORK IT HAS DONE FOR MAN

There we have two valuable processes, the bringing-up of old soil to the surface, and the addition of leaves and other substances to the soil. In addition to this, the worm is constantly opening out channels in the earth which allow air and moisture to enter, preventing it from caking and becoming non-porous.

Moisture is received in these little canals; it penetrates through their walls and so affords a wide distribution of the dampness indispensable to plant life. All these perforations and dampings of the soil open

up ways for the germination of seeds, for the spread of the tender root-hairs of plants which, in hard, unbroken soil, would with difficulty make their way about to find nourishment for the growth of which they are feeders.

Up above, the wormcasts are blown by the wind or in other ways broken down, and so are carried through cracks and little channels down into the soil again as rain falls and makes its way into the earth. The worm's quest for food and homes has the effect of mixing soil and vegetation and animal remains into an ever-increasing mass of vegetable mould which is the seed-bed of the richest plant life.

It is computed that there are about fifty thousand worms to an acre of land, and that they raise from 14 to 18 tons of soil to the surface every year, adding an inch a year in this way to the depth of the vegetable mould.

In climates like that of Britain they burrow deep to escape frost and drought, as we have seen, and such contingencies must send fifty thousand worms an acre burrowing down three, four, and five feet deep, three or four times a year, each descent being achieved only by eating and bringing up the soil excavated.

THE RICH BLACK SOIL WHICH PRODUCES THE WORLD'S BEST WHEAT

The consequence is that air and moisture reach down far deeper than plough or spade, and wherever air and moisture go, the soil is enriched and fertilised. How many worms must have worked for ages to give Manitoba her matchless land of rich black mould which produces such magnificent wheat! No other agency but worms can have done it, and Manitoba should give its worms a monument.

We see how the worms plough and till the fields for us, preparing the way for human cultivation. They have given us all the agricultural land we have, and all the land which lies awaiting cultivation.

For it is not only in temperate Britain and America that worms are at work. They are scattered all over the world. Some of the earthworms of tropical countries are quite alarming in their dimensions, five feet long and of prodigious girth. If our little worker worms bring up their 20 ounces of soil per annum, how much more will these giants pass through their bodies for the ultimate benefit of agriculture, or even of natural wild growth?

We have concrete examples of the husbandry of worms before our eyes in England and on the Continent. Where the Wash has receded in three English counties, the worms have re-colonised. They are bringing back every yard of that land into cultivation where, but for them it must have remained sour and unproductive for an age. During the First World War certain parts of Belgium were so long flooded and other parts so ravaged that many doubted if these parts would be of service again for the purpose of agriculture within our own lifetimes.

HOW THE WORMS HAVE RECLAIMED THE WAR-RAVAGED LAND

But great areas of the land have again yielded crops, thanks to the work of the worms which returned to their old haunts, burrowed and tunnelled, sweetened and fertilised, and prepared the way once more for the arts of scornful man.

Worms have made the soil of the world. They eat the fallen vegetation. They eat mineral fragments and reduce it to powder. They pass through their bodies the tiny mineral débris which once formed part of mountains, and add these to the soil. They tunnel and let in acid and moisture which erode the rocks lying beneath the covering of soil, and so cause these to become friable and slowly resolve into soil.

Vast tracts of land have been left derelict in the United States where careless farmers took out of the land more than they put in; they reaped and harvested, without manuring the land, till it became sterile. Then they moved on to fresh land. The worms will have to restore that exhausted soil, and they will, in time.

THE LITTLE ALLIES THAT GUIDE THE AFRICAN NATIVES TO PASTURES NEW

Meanwhile they are at their good work in advance of civilisation, and are not unrecognised where conditions of savagery prevail. It has been noted that in certain districts of Africa the natives look for wormcasts as the Red Indians used to look for the trail of men and animals. Where wormcasts are plentiful, these skilled sons of the wilds settle for brief cultivation, knowing that they will secure a harvest for their labours. Where wormcasts are few, they do not attempt to grow crops, realising that their efforts would be useless.

There is another important part played by worms of which no mention has yet been made. If they make ready the land

for the coming of civilisation, they are the great undertakers where civilisation has passed. They are the preservers of the sites of ancient buildings.

They gradually bury with their casts the buildings of old time, whose upper walls have fallen or been destroyed. Darwin, who gave over thirty years to the study of earthworms before writing his delightful book on them, has recorded how a field which in his boyhood was covered with stones gradually lost all trace of these stones, so that the field became a soft grassy place, and its stones a memory.

THE CHANGING FACE OF THE LAND THROUGHOUT THE CENTURIES

What worms can do in a generation with a stony field, they can do in the course of centuries with buildings, perhaps with cities. Beneath the deep foundations of great pillars and columns they may not be able to penetrate, but beneath the floors, where cement and concrete decay and crack, they can work. And it is there that they dwell, devouring the soil, and casting it up between the cracks so that, in course of time, the dried and scattered casts cover the floors, rise and cover the broken remains of walls, and bury all feet deep in soil, safe yet secret.

The very site and existence of such buildings passes from human knowledge. The plough does not go very deep, and harvests ripen over the site where beauty, wealth, and power once reigned. Accident at last takes pick and shovel deeper than the plough, and there comes to light a fragment of wall, a stretch of an old tessellated pavement, and there, when careful search is made, is some fine old Roman villa, whose sides and upper parts are gone, its floors and foundations preserved by the labours of generation after generation of worms.

SOME HARMFUL COUSINS OF OUR LOWLY FRIEND

But the earthworm is not the sole representative of its great class. There are worms in the sea, worms in still waters, worms on the shore, worms with almost unbelievable life-histories which live as parasites on animals and human beings. There are worms which, called flukes, arise from eggs in water, creep as larvae into snails, and pass from these to vegetation eaten by sheep, in which the larvae complete their course.

These creatures sometimes become a

plague among sheep, and periodically cause enormous losses among our flocks. Other forms infest the minnows, frogs, and birds. They are not harmful to adult birds, in whose crops they are killed, but if they are transferred unhurt by the old birds to baby birds they develop in the nestlings and kill them.

The tiny worms which develop under the skin of human beings in hot countries; worms which penetrate human muscles and cause the disease known as trichinosis; the extraordinary U-shaped worms, formidable with bristles; all the leeches which suck human and animal blood—these are members of the great group to which the earthworm belongs.

The earthworm is perhaps the least picturesque of them all, yet it is our only friend among them. We can all watch these for ourselves, for they thrive well in a bucket of good garden soil. They can be observed at night by the aid of a shaded light, where we may see them collecting little stones, feathers, and leaves with which to bar the entrance to their burrows. Not all the things they collect are taken below and devoured. They line their shafts with leaves, they make barriers to their front doors. Behind the barrier they lie with the head near the entrance, a habit which so often makes them prey to thrushes, blackbirds, and starlings, for the head is easily reached and the body pulled out.

THE WORK OF THE MASTER GARDENER OF THE EARTH

This fatal position which they assume in the burrow is supposed to arise from a desire to be near the open air, perhaps to snuggle up to the warmth which, in such a position, exceeds that of the damp earth below. When we see dozens of birds foraging on the lawn, tearing up worm after worm, we wonder how the stock of worms can be maintained, but it is constant. The numbers born equal the numbers eaten, and so the world goes on.

The heavy soil overlying the clay which is the foundation of the lawn is gradually worked over and over, the drainage is improved, sour soil sweetens, the advance of moss is checked, the rich green grass grows stronger, and we have turf soft, thick, and velvety, and a joy to tread.

It is the worm, our master gardener, who does the work. Out of sight and out of mind, he makes soil fruitful, fine, and rich for the whole of our habitable Earth.

The Story of the Things We See About Us Every Day



The hour hand, the face, and the pendulum of Big Ben

THE STORY OF THE CLOCK

ALFRED THE GREAT, one of the noblest kings who ever ruled over England, never saw a clock. He used to allow himself eight hours for work, eight hours for pleasure, and eight hours for sleep. In order to divide the time like this he had candles made which took a certain time to burn away, and so told him how the hours were passing.

Even that was better than many men were able to do. They knew how long a year was, because it takes the Earth a year to go round the Sun. They knew how long a month was, because it takes a month for the Moon to go round the Earth. They knew how long the day and the night were, because it takes just a day and a night, all but a few odd minutes, for the Earth to turn round once. But all sorts of things had to be invented before clocks were made to tell how an hour passed, and some of these ways of telling time are shown on page 2297.

But there is nothing so simple and so good as a clock, which tells us the time at a glance as soon as we have learned to understand it.

There are many different sorts of clocks. Some will go for years, once they have been wound up. Others will go for eight days; others need winding every day. Electric clocks need no winding at all;

once they are connected to the electric mains they work on without gaining or losing time. In all clocks, however, wheels have to be made to go round so regularly that it will always take them a certain time to do their work. When you wind up what is called a grandfather's clock you wind strings on to a sort of barrel. At the end of the strings heavy weights are fixed. These weights hang down and are always pulling. The pulling makes the wheels go round, as the pulling of a horse makes the cart go. The wheels have cogs, or teeth, which fit into the cogs of other wheels, and all have to go round at the same time, though not all as fast as one another. Some wheels have a lot of teeth, others have not so many. So while one wheel turns round in sixty seconds, or one minute, another wheel takes sixty minutes, or one hour in which to turn round. All this turning is to make the hands move round and round the face.

There are many parts always at work. There is the pendulum swinging, and there is the part which prevents the clock from doing its work too quickly or too slowly. If the clock goes too quickly, or gains time, as we say, we unwind a little screw at the bottom of the pendulum. This lets the weight at the end of the pendulum

slip down a little, and causes the pendulum to swing more slowly. If the clock loses time we wind the screw up a little. This makes the pendulum shorter, and causes it to swing a little faster. Some clocks have no pendulum. They work with a spring. Then, instead of altering the pendulum, we have to move a little pointer. If we push it to the right we make the spring tighter, and the clock goes a little faster. If we push the pointer to the left we make the spring looser, and the clock goes more slowly.

THE WATCH THAT RINGS A BELL TO TELL TIME IN THE DARK

Some clocks not only tell the time with their hands, but strike the hour. When the long minute-hand points to the figure twelve, and the short hour-hand points to one, a little hammer at the back of the clock gives one blow on a bell or gong fixed in or on the clock. This tells us that it is one o'clock, without our having to look. Some clocks strike as each quarter of an hour passes; others play a tune at the end of each hour.

Clocks and watches can be made to do very wonderful things. One watch, called the repeater watch, can be made to tell us what time it is even when we are in the dark. We have simply to press a knob and a little bell rings out the number of the hour, and the number of the quarter-hours that have passed since that hour was reached. Then there is the alarm clock, which rings a bell at the hour for which we have set it.

So through day and night, week after week, year after year, the faithful clock goes on telling us the time. Some clocks last hundreds of years. The editor has heard a tune played in Holland by a clock which was ticking when Napoleon was alive, and another in an old church in England which has lasted more than three hundred years. Both these clocks still tell the time as correctly as if they had been made only a year ago.

THE CLOCK THAT SAVED A MAN'S LIFE BY MAKING A MISTAKE

But nothing is perfect in this world. There is a story that once a man's life was saved by a mistake made by a clock. A sentinel, who was supposed to keep awake all night at Windsor Castle, was said to have fallen asleep while on duty at midnight. If they had been able to prove that he had been asleep he would have

been shot, so he was very anxious to show that he was awake. "I can prove that I was not asleep," the man said. "I heard Great Tom of Westminster strike thirteen." At first they thought this a stupid story, because clocks do not strike more than twelve; but when inquiries were made it was found that what the man said was true. The clock had something wrong with it that night, and struck thirteen instead of twelve. That mistake of the clock saved the soldier's life. It is curious that many people may have heard Big Ben strike thirteen since, for in our time, when wireless carries Big Ben's notes round the world, those who live in Westminster may, if they are clever, hear the clock strike twelve by wireless, and then, by going quickly to the window, may catch the last note once again, owing to the fact that wireless waves travel more quickly than sound waves.

THE GREAT BELL WHICH IS RUNG ON SOLEMN STATE OCCASIONS

Great Tom of Westminster was the name of a great bell cast in the reign of Edward the First. It was hung at Westminster Hall, where the judges used to sit, and tolled the time of day for their information year after year. At last William the Third in whose reign the incident recorded above is said to have occurred, presented the old bell to St Paul's Cathedral where it was hung and became the striking bell of the old clock. Westminster Tom still hangs in the clock tower of the cathedral, but has long been silent except when struck on certain solemn State occasions.

Big Ben at Westminster has had a chequered history. As originally cast it was hung for testing purposes at the foot of the Clock Tower and soon cracked. It was recast and hoisted into position. Once again, however, it cracked. After some time a lighter hammer was employed and, the striking-point being altered, the tone was considered satisfactory. Ever since 1853, except for a period during the First World War, Big Ben has been ringing old days out and new days in, little the worse for the crack in his side. The clock and its bells cost £22,000.

It is lovely to think of Big Ben's song ringing round the world, saying:

So hour by hour
Be Thou my guide;
That by Thy power
No step may slide.

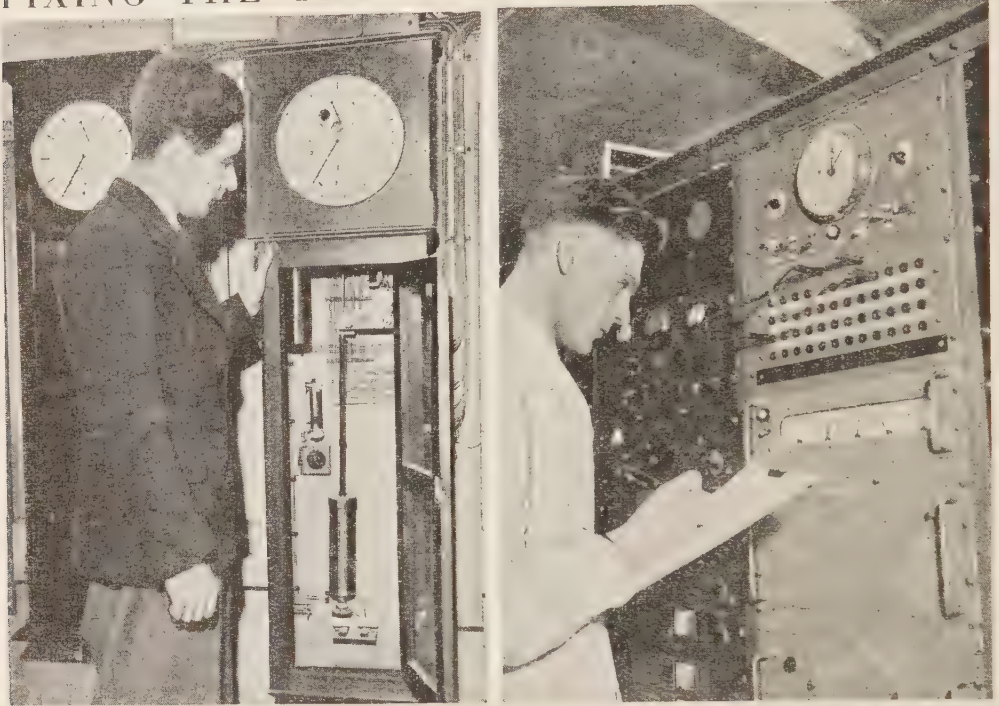
BEHIND THE GREAT FACE OF BIG BEN

At the top of 360 steps in the Clock Tower at Westminster Big Ben has marked time for the best part of a century. It is not possible to understand the size of the clock as we stand on the ground. It has four faces, each 23 feet across : nine or ten times as wide as a door. The minute hands are 14 feet long : they would reach higher than an ordinary room. The pendulum weighs nearly 450 lbs. The figures on the face are each two feet long, and the minute spaces are a foot square. The minute hand of Big Ben jumps half a foot

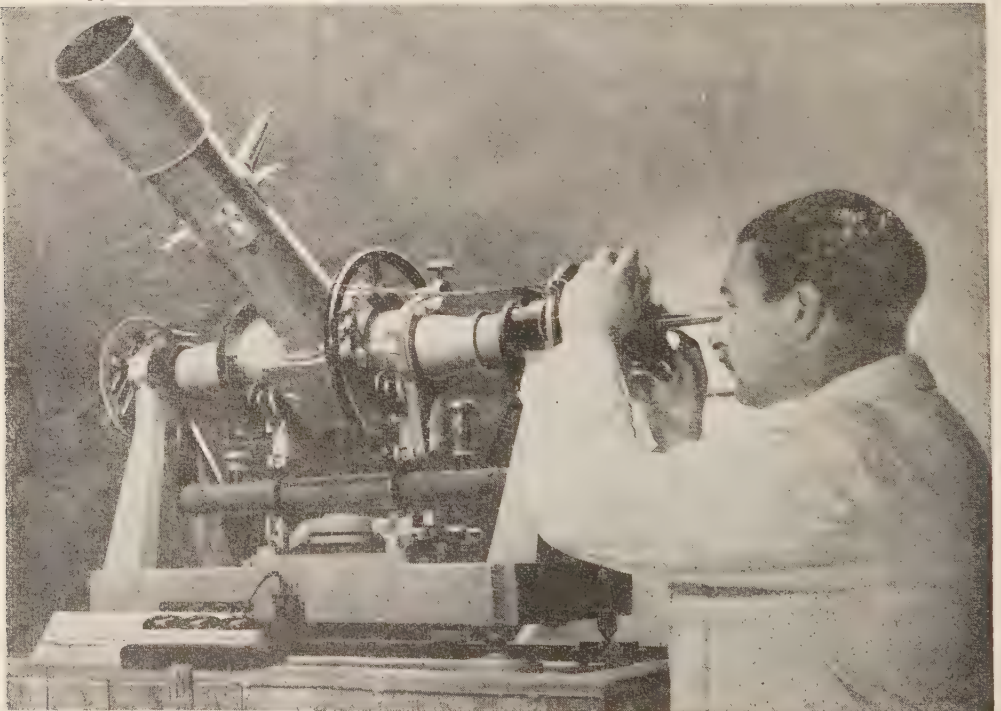


every time it moves. It is not easy to believe these figures, but that is because our eyes deceive us when we look up to a great height, and Big Ben stands so high that if thirty tall men stood on one another's shoulders the top man would only just touch the middle of its face. Big Ben is not the biggest clock in Great Britain, for it has a neighbour on the Thames Embankment with a face 25 feet across. Liverpool, also, has a clock with a face 25 feet across, and the face of the Singer clock at Clydebank is 26 feet across.

FIXING THE TIME FOR THE WHOLE WORLD

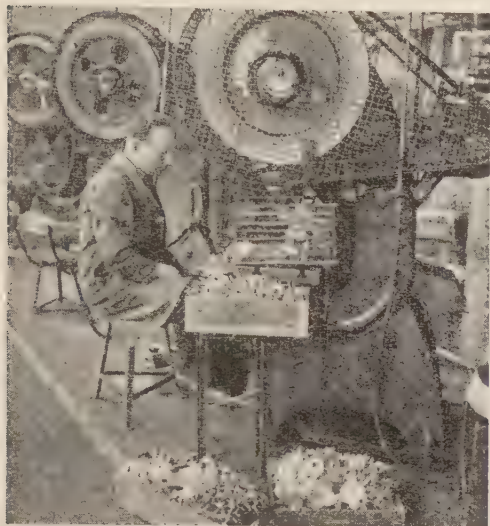


On the left is the pendulum clock at Greenwich from which for over a century the world has set its time. By means of electrical contacts on the pendulum each second is relayed to the electrical monitoring apparatus on the right, which checks the accuracy of the time to the fourth decimal point.



This is the instrument through which readings of the stars are made to fix Greenwich Mean Time. Of the ten stars selected for observations examples which are not too bright are preferred, as these give a clear image on the instrument. As they travel across the sky from east to west the stars are seen through a prism.

TURNING OUT CLOCKS IN THOUSANDS



Mass-production is the keynote in this clock factory. This is a press for turning out chassis.



Here we see a multiple small-parts press. A supervisor on a mobile chair inspects the machinery.



This girl is drilling holes in the clock faces ready for the hands to be fitted in.



Finished clocks move along a conveyor belt while workers assemble hands and faces of other clocks.

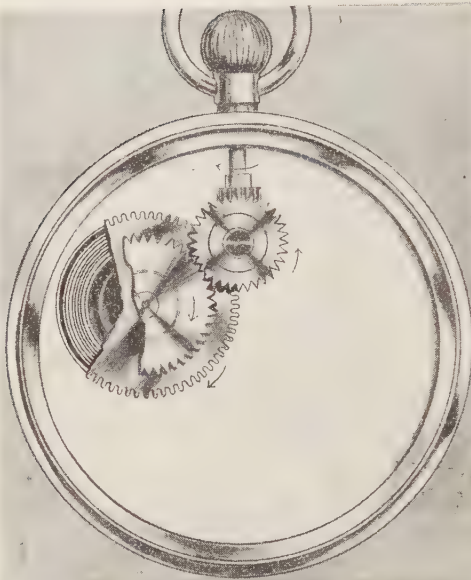


Here marine lever clocks are being assembled. For greater precision, these clocks are hand-made.

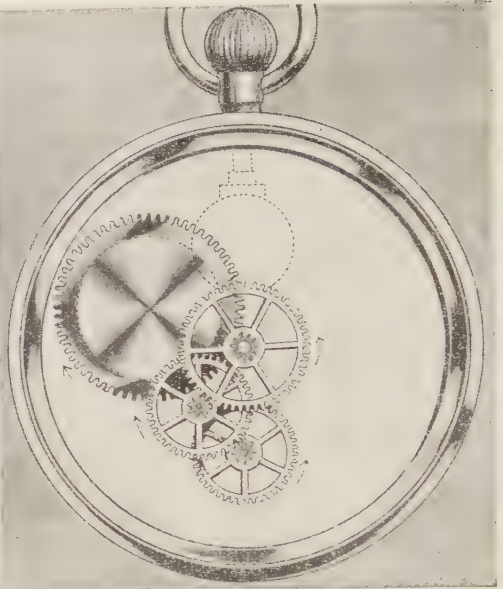


This picture shows rows of new marine lever clocks being timed with the aid of a chronometer.

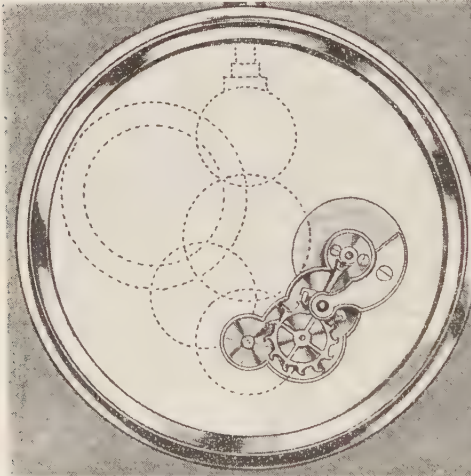
HOW A WATCH WORKS



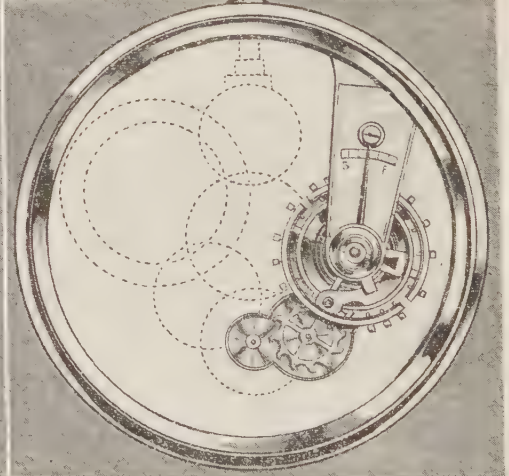
When we turn the knob we are putting into the watch the power that will make it go. By means of a series of gear wheels the mainspring, on the left, is coiled up tightly, power being thus stored-up in it. The spring is enclosed in a barrel, to the side of which one end of the spring is hooked, the other end being attached to the barrel axle.



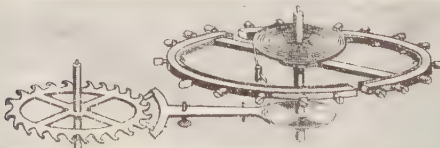
When the mainspring begins to unwind it pulls the barrel round, still in the same direction, cogs engaging and causing a series of toothed wheels to revolve at various speeds, so giving motion to the mechanism. We are looking at the back of the watch, and although for the sake of clearness complete wheels are shown, parts of two are really hidden.



The fourth wheel of the series drives what is known as an escape wheel, which is connected by an ingenious mechanism (known as the pallets and lever) with a roller turning on the same axle as the balance-wheel and hairspring.



The balance-wheel and hairspring of a watch act in the same way as the pendulum of a clock: they regulate the movements of the escapement, the part of the watch which prevents the mainspring from running down rapidly.



On the left is an enlarged view of the lever escapement. The teeth of the escape wheel are locked and unlocked in turn by the pallets projecting from the lever, thus moving the lever on its pivot and giving a partial turn to the balance-wheel. The hairspring is slightly wound up but immediately unwinds, turning the balance-wheel in the opposite direction. The lever is pushed back, the escape-wheel again moves on, and the whole action is repeated again and again. The picture on the right gives a side view of the mechanism; the hands are seen attached to their respective wheels.

Plain Answers to the Questions of the Children of the World



A model traffic roundabout for children in a London park

WHAT ARE THE RULES OF THE ROAD?

THE King's Highway is for all: children, old people, animals, and cars. We cannot use it as if it were ours alone.

Traffic has grown so much that the quiet roads of our grandfather's day have become crowded with vehicles, some moving slowly and some fast, and the roads are full of surprise. Unless we are careful we may plunge into injury or death, for the road has become the most dangerous place in the country. It is made more dangerous because so many people use it without thinking, running into it suddenly, crossing without looking, forgetting how fast a car goes.

If we are all careful the road is quite safe.

It is easy to cross if we are wise and take our time. But even on the best of roads there will be dangers, for among so many drivers there are always some who are selfish, some who are incompetent, and some who get suddenly excited and do not know what to do.

The Ministry of Transport has been doing its best to make the roads easy for all—for those who walk and those who cycle and those who drive—and it has issued a Highway Code which sets a standard of conduct for all who use the

roads. For pedestrians, crossing the road is often a hazardous business and in busy streets there are special crossing-places which we may call the Safeways.

There is the Safeway controlled by lights; and here we should watch the traffic as well as the lights and cross the road when we can see it is safe.

There is the Safeway controlled by a policeman; and here we must do as the policeman directs.

There is the Safeway without a policeman and without lights; and here we ourselves may signal to stop the traffic.

We should make a habit of crossing by the Safeway in busy streets; but before we cross any road we should *Stop, Look Right, Look Left, Look Right again*, and then, if the road is clear, cross at right-angles, keeping a sharp look-out.

In all cases when we cross in traffic we should *look toward the traffic coming to us* and let the drivers know that we see them. A driver who knows that we see him knows what to do; it is good to give him a signal. Never loiter in the roadway. Evil is wrought by want of thought. Often a driver does not know what a walker will do, and many accidents are

FIRE · WIND · WATER · LIFE · MIND · SLEEP · HOW · WHY · WHERE

caused by careless walkers. A driver may turn suddenly to save a walker and may kill someone else.

It is not only on the roads but on the footpaths that we must be careful. We should always walk on the left, so that we are facing the traffic coming on. Walk left and drive left is the universal rule of safety, except in roads where there is no footpath; then we walk right to face the danger.

The rule is very simple: walk right if we have to walk on a road, so that we see what is coming, but walk left on the footpath.

We should give ourselves time and not dash across; a new situation may develop any moment (a car may skid or we may slip), and we should give ourselves time for surprises. We should remember that all the people on the roads are doing their best, and should not add to their difficulties. If we are with young people or old people we should guide them.

Remember that the most dangerous places are the corners, where anything may be coming along four ways. Another great danger is in getting out of vehicles. Never step off a vehicle till it is stopped, and look carefully where you go. Never get out of a car on the traffic side. Never run across behind a standing vehicle or a slow one; something fast may be coming that you cannot see. Never hang on to a vehicle, and never run out of a gateway into the road. Remember to take your time and look where you go. It is carelessness that makes the danger. Perhaps we may learn such rules as these by heart :

Cross by the Safeway
Look before you cross
Let a driver know you see him
Guide the young and old
Walk left on the footpath
Walk right on pathless roads
Do not loiter in the road
Beware of fast cars hid by slow ones
Never play in busy streets
Be careful in leaving a bus
Never step off a moving vehicle
Never hang on a vehicle
Do not run into the roadway

The roads are not for selfish or careless people; they are for people who remember others and care enough about their lives to give a little thought for them.

The road is generally safe for the wise and always dangerous for the foolish.

Who Was Romulus Momyllus ?

Romulus Momyllus was the last emperor of the Roman western Empire. He was the son of Orestes, who was killed after the sack of Rome in 455. Romulus called himself Augustus, after the first Roman Emperor, but the Romans nicknamed him Augustulus, meaning little Augustus. The name Momyllus is a Greek mistranslation of his first name Romulus. Romulus resigned in 476, and nothing was known of him until this century when Professor Flinders Petrie found his jade seal in a tomb in Egypt. On this jade seal is the portrait of Romulus, the last of the rulers of a city which was founded by one who bore the same name.

What is the Great Hole in the Kalahari Desert ?

The Kalahari Desert of South Africa is an almost waterless waste west of Rhodesia and stretching to Namaqualand which has little water or vegetation and supports only the native Bushmen. It has been and is traversed notably by a trekking community which established itself on the farther side of it in fertile country, but one of its curiosities is so well hidden and off the beaten track that few have ever seen it. It is a mighty hole half a square mile in area with nearly perpendicular walls and more than 160 feet deep.

So cunningly concealed are the edges of this pit that the wild beasts of the Kalahari sometimes miss their footing and fall to the rocky bottom, and once a man was trapped within it for three years.

He was Erlanger, a German who was trekking across the desert with a Boer friend Oosthuizen, and they outspanned near the brink of the great pit. During the night Erlanger's wagon slid down a slope near the edge, burst through the slender barrier of bushes at the edge of the pit, and shot down into it. By a miracle he escaped death, though stunned and bruised. But Oosthuizen, believing that he must have perished, moved away from the terrifying place without taking any steps to find him.

Erlanger was in the most dreadful situation that can be imagined. When he found strength enough to look about him he found there was a small stream beginning on the north wall of the pit and running along the bottom to disappear in a cavern. So at any rate he had water,

and for weeks he lived on the carefully hoarded provisions in his shattered wagon.

One night a crash woke him and he found that six hartebeestes had fallen into the pit and had been killed. He secured the meat, dried it, and lived on it for many days. But there were many days to come, for he lived in this prison more than three years. He would have died if it had not been that from time to time other animals fell into the crater: eland, giraffe, even elephant and rhinoceros. The end of this tale of courage in privation is not a happy one.

Erlanger found it impossible to climb the steep sides of the pit, and he then attempted to make a ladder of pegs out of the ruins of the wagon. Many were the failures, but at last, after nearly three years of his solitary confinement, he reached the lip of the hole, only to find himself still alone in a desert that had not even the water which had sustained him in the pit. He was almost perishing of thirst when five Bushmen found him and got him back to civilisation. He died two months later, living long enough only to tell his strange and almost incredible tale.

Who is John Bull ?

Many countries have nicknames and are represented in pictures by an animal. The British lion is the animal which stands for England, and John Bull is its owner and master. The lion is the country; John Bull is the nation. The name of John Bull comes from a work written by John Arbuthnot, a witty Scottish doctor and writer, a great friend of Swift and Pope. He was born in 1667 and died in 1735. The sketch he wrote dealt with the political affairs of Europe at the time, and the countries were made to appear as if they were men and women. England was John Bull, and Queen Anne was Mrs. Bull. The Church was Mr. Bull's mother. Scotland was John Bull's sister Peg. England was made to appear a man of very good nature, but not without faults. John was shown to be an honest, plain-dealing man, courageous, and rather hot-tempered. He was supposed to be always ready to meet the French king with any sort of weapon, in earnest or in play. He was very difficult to deal with, especially if anyone tried to master him ; but, treated with kindness and a little flattery, he could be easily led.

Why Do We See Ourselves in a Looking-Glass ?

A looking-glass is made with a layer of quicksilver behind it. If that were not there we could see through the glass as we see through the window; but the quicksilver prevents the light going through and sends it back again. The glass and the quicksilver are both perfectly smooth and flat, and we can see ourselves in anything that is perfectly smooth and flat and that is able to throw the light back to us. We cannot see ourselves in what we call dull surfaces, because they keep the light; nor can we see ourselves in things with rough surfaces, because they do not throw the light back fairly, but scatter it in all directions. If we throw a ball against a perfectly smooth wall it will come straight back to us. If we throw it sideways it will come off the wall in a certain way. We could easily throw it to the wall so that it would bounce off it at an angle to a friend standing farther along the wall. But if, instead of a smooth wall, we had a heap of loose stones to bounce the ball against, we could never tell where the ball would go.

When we stand opposite a good glass the light from our face hits the glass and comes straight back; but if we stand opposite something rough the light comes back this way, and that, and the other, as if we threw a handful of marbles against a heap of stones. In that way, of course, we cannot see ourselves.

Why is Lancashire the Cotton County ?

Nature fashioned Lancashire to be the greatest cotton manufacturing county in the world. It is sheltered on the east by lofty hills, which, to a great extent, keep off dry land winds. From the south and west come winds which are moist and mild through passing over the Gulf Stream. The effect of this is that Lancashire has a very heavy rainfall, sometimes twice as heavy as that on the east coast. Naturally, then, the air of Lancashire is moist. This favourable air makes the cotton fibre soft and easy to handle.

Do People Rise to the Surface Three Times Before They Drown ?

The answer to the question is no, and the old story that drowning men rise three times is entirely wrong. Some-

times people who drown do not rise at all—for instance, sometimes they strike their heads against something hard at the bottom. Usually they do rise, for our bodies are only very slightly heavier than water, and the movements of arms and legs, even of a person who is not a swimmer, will raise his body to the surface until he takes in so much water into his stomach and lungs that his body gets heavier and can rise no more.

It is a matter of chance how often, if at all, a drowning person rises. A diver in London, once hit the water flat so that he was winded. He simply lay at the bottom, for he was unconscious and could make no movements. If everyone had waited for him to come up even once, he would have been drowned, but a swimmer dived in and brought him up, and he was soon all right.

This case shows that it is not safe to believe in old-world traditions, however old or popular or pleasant they may be, without confirmation, though it does not follow from this that all tradition is untrustworthy. Indeed, many so-called superstitions have a basis of fact.

Why Does Chloroform Send Us to Sleep ?

All our consciousness depends on work done by the brain. A person who has breathed a sufficient quantity of chloroform or ether, or has had a large enough dose of alcohol, cannot feel pain even when the skin is cut, because pain is really felt in the brain, and the brain of such a person is prevented from working.

The question, then, is: How do anaesthetics, as these things are called, stop the working of the brain ? We do not know much about it yet, but we know that such an anaesthetic as chloroform is made up of certain chemical molecules; we can prove that when chloroform is breathed, these molecules pass into the blood as it circulates through the lungs, and so are carried by it to the brain. We know, too, that chloroform is a very volatile thing, and readily passes through the walls of the blood-vessels in the brain into the substance of the brain itself. There the chloroform molecules combine with the molecules of the brain, probably with the result that the brain can no longer use up the oxygen in the blood, and stops working.

Who Was the Maid of Saragossa ?

Probably the fiercest resistance Napoleon ever met with came from the people of the old Spanish city of Saragossa, the capital of the ancient kingdom of Aragon. Early in 1808 French troops swarmed across the Pyrenees to make Napoleon's brother Joseph king of Spain, but though disorganised, the whole country rose as one man against the invaders. When the French laid siege to Saragossa, the people defended their city so desperately that the attackers had to draw off after suffering terrific losses.

But in the winter of the same year another French army appeared before the city, and it was in this second siege that Augustina, known as the Maid of Saragossa, won a heroine's fame. Her lover having fallen at his battery, she took his place, and her deeds of bravery were such that the whole garrison was heartened by them. Though Saragossa was eventually taken, Augustina and the gallant Spanish commander Palafox won a place for themselves in history by their stubborn defence against tremendous odds.

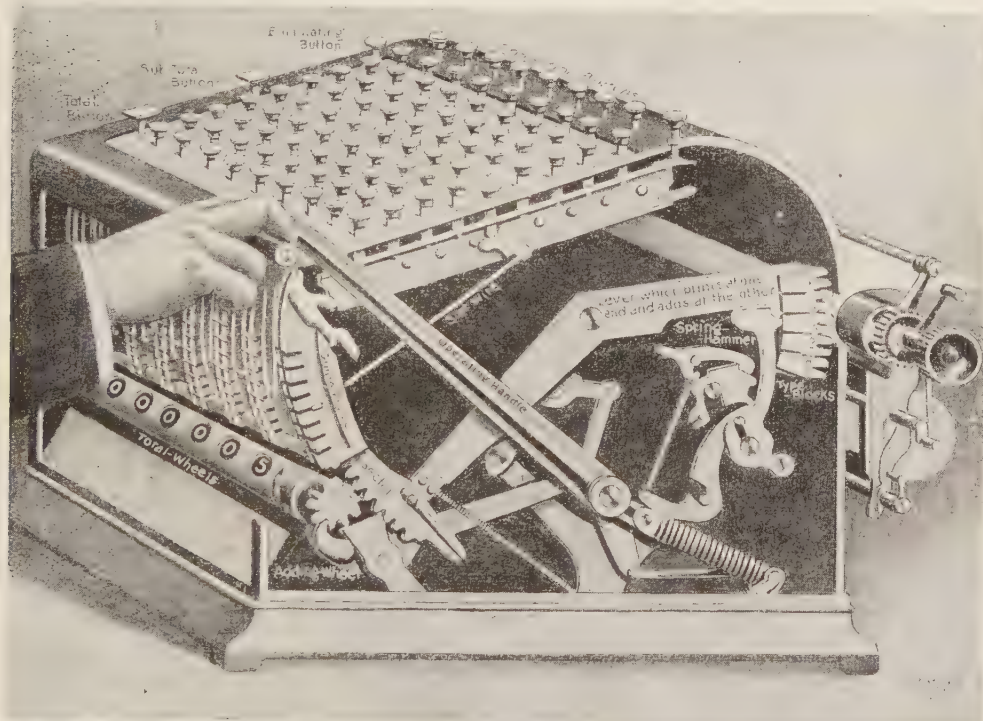
Who Made the First Adding Machine ?

In Ancient Greece and Rome there was an adding machine in general use, and it flourished almost unchanged down to the Middle Ages. It was called an abacus, and consisted of a smooth board with a narrow rim, on which were arranged rows of pebbles or pieces of bone or ivory. Later it took the form of beads or balls strung on wires, and this kind of adding machine is still in everyday use in many eastern countries.

In Europe attempts were made to improve on the abacus, and in the seventeenth century Blaise Pascal made a calculating machine with trains of wheels, which worked somewhat on the principle of the cyclometer. The greatest advance, however, was made by Charles Babbage, an Englishman who died in 1871. He invented a very elaborate calculating machine, the drawings for which covered 400 square feet of surface. The Royal Society examined a small model of it, and reported so favourably that the Government voted Babbage £1500 to help him to perfect the apparatus. He worked hard at it, but after seven years the machine was still unfinished, although the Government had spent £7200 on it,

and Babbage an additional £7000 of his own money. It was completed to work sums only up to five figures, and was shown at the Great Exhibition of 1862. A little later two Swedish scientists were so sure that Babbage's idea was practicable for

were so complicated as to be useless for ordinary office work, owing to their cost, but several really clever and ingenious adding and calculating machines were at last evolved, working almost any kind of sum with unerring accuracy. In the



THE MACHINE THAT DOES ARITHMETIC

This wonderful machine prints a column of figures, adds them together automatically, and prints the total. The upper picture shows the work of a lever, of which there is one for each column. When a key is depressed—say, 5, as in the drawing—the sector drops five points, being regulated by a slot wire attached to the key. At the same time the other end of the lever is raised 5 points, bringing an attached type figure 5 opposite the spring hammer. This hammer, actuated by the operating handle, strikes the type figure and prints it. As the handle returns, the rack on the sector engages with the cogs of the adding wheel, turning the wheel five figures forward. Other figures are added to the wheel in the same way, up to 999,999,999 on the machine illustrated. The total is printed by pressing down a key and drawing down the operating handle. The lower picture shows the front of the adding wheels, three being shown uncovered.

large numbers, that they worked at it, and after twenty years they completed a new machine. The English Government paid £1200 for a copy of the apparatus, and this was set up in the Registrar-General's department at Somerset House, London, and was long used there. Such machines

service of science today there are electronic computing machines which, by adding and subtracting electrical impulses, can multiply numbers and return the answer in a thousandth of a second. There is a picture of one of these giant machines on page 2717.

How Does a Sailor Know His Way in the Middle of the Ocean ?

For centuries the sailor who ventured out of sight of land had only the Sun or the stars to guide him.

The position of the Sun and most of the stars changes from hour to hour, however, and until an accurate clock could be carried by the ship the best means of finding direction in the Northern Hemisphere was by the North or Pole Star, whose apparent position does not vary. Nowadays, in addition to using the sextant, by which he can fix his position in terms of latitude and longitude, a navigator steers his ship by either a gyro-compass, such as is described on page 3575, or more generally by the magnetic compass.

The Earth is itself a huge magnet, having a north magnetic pole and a south magnetic pole. What we call the north pole of a magnetic needle always points to the north magnetic pole, and thus the sailor can steer his course with the help of the compass more accurately than if he went by the North Star.

What is Selenium ?

Selenium is an element discovered in 1817, and named after the Greek word for the Moon, Selene. When it was discovered that the electrical resistance of selenium varied with the amount of light shining on it, experiments were made, and it soon became possible to utilise this property. From these experiments the selenium cell was developed. In appearance a selenium cell is rather like a wireless valve or electric lamp. Inside the glass globe is a flat ground-glass surface which is coated with a film of metallic selenium, the edges of which are in contact with the electrodes. Selenium cells were used in the early television and talking film apparatus, but have now given place to a more sensitive type of cell which uses a potassium or caesium element. The selenium type of cell is cheaper than these photo-cells, as they are called, and is still widely used for light-actuated apparatus where sensitivity to small changes of light is not important. An example of this use is the invisible-ray burglar alarm. Here a beam of infra-red light is focused, across a doorway or window or across the front of a safe, on to a selenium cell. If this beam of light is interrupted the resistance

of the selenium changes, and, operating a switch, starts an alarm bell. The selenium cell is also used for automatic door opening, smoke detection, counting articles on conveyors or people or vehicles passing by, and for turning on street lamps or advertising signs at dusk and turning them off again at dawn.

Why is a Train so Noisy in a Tunnel ?

What do we mean by making a noise? Noise is produced by a large number of waves of sound so mixed up and combined that, though no musical note is formed, a mere impression of sound is conveyed to the brain. We all know how sound is made up of vibrations in the air. These vibrations travel through the air and gradually disappear. Noise, however, as well as musical sounds, can be intensified by interfering with the sound-waves.

Thus a sound in a room is apparently much louder than the same sound in an open space, although actually the volume of sound is no greater, the difference being that in one case the sound is concentrated instead of being dissipated in space. In the room the sound-waves are caught by the walls and thrown back upon our ears again and again, so producing the sensation of loudness. So with the train in a tunnel. As the walls of the tunnel are quite close to the wheels of the train, the sound produced is thrown backward and forward with great rapidity, instead of the sound-waves easily escaping as in the open, and the result is that an almost deafening noise reaches our ears.

What was Fortuna's Wheel ?

In the ancient world one of the most powerful gods after the dwellers on Olympus was Fortuna. She was the goddess of chance and dealt at will with riches and poverty, with happiness and sorrow. All human blessings or pains were supposed to be dependent on her, so that everyone worshipped her.

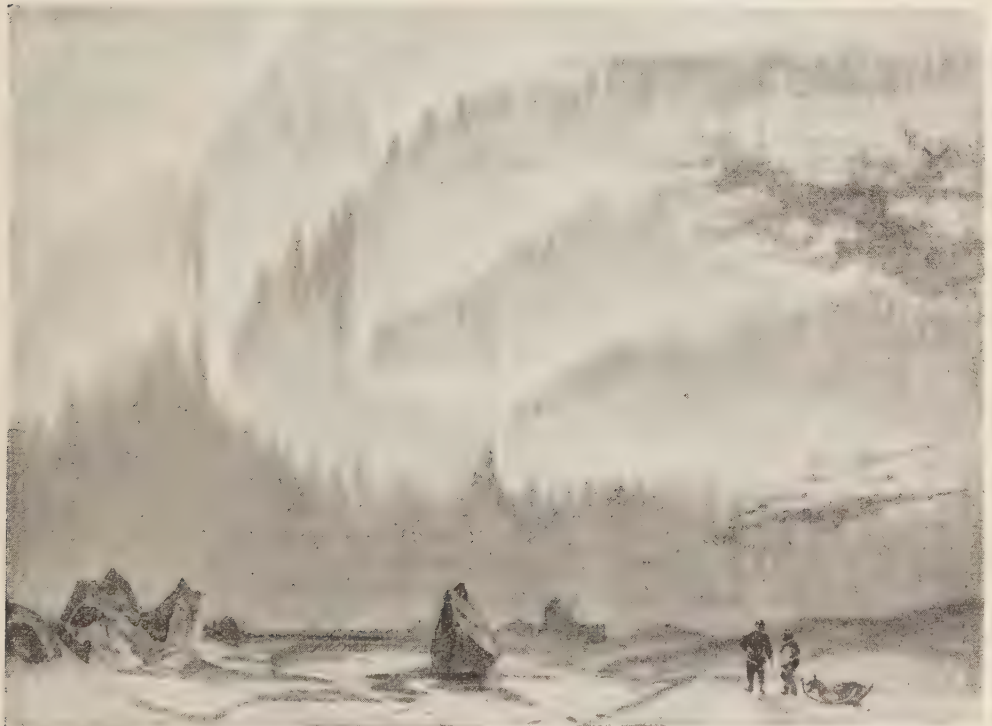
Asiatics, Greeks, Romans, adored Fortuna and built temples to her; Rome had two of them, crowded with rich offerings. On ancient buildings the goddess was sometimes figured as a blindfolded woman carrying a horn of plenty and standing on a wheel, a symbol of the inconstancy of fortune. Modern sculptors have often represented her with a rudder, meaning that she steers the course of Fate.

What is the Aurora Borealis ?

The Aurora Borealis, or Northern Lights, seen in the Arctic regions of the northern hemisphere and sometimes farther south, are, like the Aurora Australis and the Auroral curtains of the Antarctic, caused by collisions between electric particles arriving from the Sun and the particles of rarefied gases on the outskirts of the Earth's atmosphere. Many of these beautiful curtains were painted in delicate colours by Dr. Edward Adrian Wilson when accompanying Captain Scott on his expeditions to the Antarctic.

the other. If this cage of force is bombarded by a countless number of electric messengers arriving in streams from the Sun, its balance and order are upset. The result is a serious disturbance of the magnetic field.

But why do these phenomena appear at some times and not at others; and why are they seen at some places more than at others? The answer to the first part of the question is that they seem to be provoked by special kinds of activity on the Sun, and more particularly by those which are associated with sun-spots.



THE WONDERFUL FORM SOMETIMES TAKEN BY THE AURORA BOREALIS, OR NORTHERN LIGHTS, DURING THE ARCTIC NIGHT

In the British Isles the display of the Aurora Borealis is most common in the late evenings about the period of the equinoxes, March and September. It may occur, however, at any time of the year. It usually lasts for a few hours, and may be visible on successive evenings.

The Earth as it spins on its axis is like a revolving magnet or dynamo, surrounding itself with a field of magnetic force, which might be pictured in a diagram as a sphere (the Earth) in a wire cage, of which the wires, representing the lines of force, curve outwards from one Pole to

When sun-spots (which are electrical storms on the Sun) are in progress, there are emitted from the disturbed solar areas streams of charged electric particles *which travel in straight lines*. As they travel in straight lines from a given area on the Sun the streams may sometimes miss the Earth altogether. If, however, the Earth in its journey becomes immersed in one of these enormous beams or streams of particles, these particles are deflected towards the Poles by the Earth's magnetic field. As they enter the Earth's atmosphere at a mean height of 70 miles, though a

height of over 160 miles has actually been measured, these particles collide with the atoms and molecules of the oxygen and nitrogen gases and cause them to become luminous. Changes in the relative strengths of the red and green lines of the spectrum of oxygen in particular cause the different colours seen in the auroral displays at different times.

The effect is of something the same character as when an electric discharge is sent through a tube of highly rarefied gas, such as is sometimes called a Crookes tube. In these tubes a glow appears, of a colour which depends on the thin gas which is there. The aurorae show glows which are like these vacuum tube glows.

The Earth as it revolves carries the charged outer gases with it, away from the Sun and its electric battery; and on the dark side of the Earth a discharge takes place into the shadow; and so it continues until the stream of electric charges is cut off.

Who are the Bluecoat Boys ?

The boys of Christ's Hospital are usually called Bluecoat Boys owing to their quaint dress, which is a survival from that worn when Edward the Sixth founded the school in 1553. Originally the boys wore a blue woollen gown with a narrow red belt, knee-breeches, yellow petticoat and stockings, a clergyman's bands at the neck, and a blue worsted cap; but the cap and the petticoat were discontinued about the middle of last century. The school itself stood in Newgate Street, London, for 350 years, but was removed in 1902 to its present site at Horsham in Sussex.

Who Invented Shorthand ?

There is no historical record of the actual invention of any system of shorthand in any ancient country.

Probably shorthand was written in Greece, and certainly in Rome, though the ancient methods were forgotten and brief examples that remain cannot be deciphered. Many systems have been practised in this country, since rapid writing was needed. England has indeed led the way in the attempt to make writing keep pace with speech. The earliest teachers, in Queen Elizabeth's day, were a Dr. Timothy Bright, who secured a monopoly for his books for fifteen years, and Peter Bales, who was a contemporary; but their systems demanded a prodigious memory.

Shelton's system (1620) was the one used by Pepys in his diary. Many systems that followed were simply based on the alphabet; but some were phonetic, like Pitman's modern system. The best of the alphabetic systems was Taylor's, which used the vowel dot. Taylor's system was introduced, with variations, into France, Germany, Italy, Sweden, and Spain. Mason's system, modified by Gurney, became the official shorthand of the British Parliament in the nineteenth century. Byrom's system gained the protection of an Act of Parliament. Pitman's Stenographic Sound-Hand, now called Phonography, or sound-writing, was first published in 1837. It has been developed and made known with such care and skill that it has won the obvious advantage of almost universal use. Its special feature has been its insistence on a distinctly phonetic basis.

Why are Some People Colour Blind ?

Consider first how we see. Light is reflected from an object into the eye in a train of vibrations. Think of a rope extending from an electric light to the eye, and imagine that the rope is being shaken violently from side to side so that waves of movement pass down it, becoming reduced to quite small ripples if the rope is thin enough, and is shaken fast enough. That is how light reaches the eye. The ripples of light go through various eye lenses, passing finally through the retina and coming up against a structure in the eye from which they are reflected through the retina again. On their return passage they influence another most important part of the eye, the rods and cones. The rods are like microscopic pencils, the cones like tiny flasks, the smaller end pointing outwards; and these two together form the outer end of the nerve which joins the brain, and which, when affected, gives the sensation of light. In the outer part of the rods is a substance named visual purple, which is sensitive to light, and is in fact altered when light falls on it, as the chemicals of a photographic plate are changed by light that falls on them. The change brought about in the visual purple is much the same as if an instantaneous photograph were printed on the cones and despatched to the brain. The visual purple will alter with any kind of light. But among the one-coloured lights some affect it faster than others. It bleaches

(and recovers) fastest when greenish - yellow rays fall on it. The blues are next most effective as bleachers; the reds come last. We may here remember that, so far as numbers of vibrations go, red light vibrates 395 billion times a second, and violet 763 billions. It is easy to understand that these great differences in number of vibrations would affect the rate of bleaching process in varying degrees, and most eyes would be able to recognise the difference. But if the visual purple is badly distributed, or is insufficient in quantity, the less marked differences in its bleaching (by different colours falling on it in vibrations) will not be recognised by the brain, and the person will be colour blind.

What is a Stalactite ?

A stalactite is like an icicle, and is formed in something of the same way by water, which trickles down and hardens into a solid. In an icicle, however, it is cold which is hardening the water into



WONDERFUL SHAWL-LIKE STALACTITES IN YALLINGUP CAVE, WESTERN AUSTRALIA



GREAT STALAGMITES AND LITTLE STALACTITES IN THE JENOLAN CAVES IN NEW SOUTH WALES

solid ice, while in the water forming a stalactite the hardening matter is contained in the water itself, being in fact some mineral substance dissolved in it. Just as the mineral dissolved in water is left behind as a deposit on the inside of a kettle, so this mineral remains behind when the water drips from the stalactite. In a stalactite the mineral gradually grows downwards from the place where the drops begin to fall. A stalagmite is merely a stalactite pointing upwards from the floor, usually of a cave, on to which the water is dripping and is formed in much the same way, climbing upwards instead of downwards. Frequently these things meet, and when this happens they make a wondrous natural spectacle in the gloom of a cave.

As the illustrations show, there are fine examples of stalactites and stalagmites in Australia; and the stalactite caves in the Cheddar Gorge in Somerset, England, attract visitors from all over the world.

WHAT IS THE WORLD LIKE AT THE POLES?

The question can be answered quickly if we mean what could we see when looking around if we were standing at the North Pole or the South Pole.

At the North Pole we should be standing on a flooring of ice, perhaps flat, perhaps ridged and hummocky; and there would be no sign that anyone had ever been there before us. Around us, as far as we could see, would be ice—a world of white; and under the ice on which we stand would be a deep sea, probably three times as deep as Ben Nevis is high.

There would not be any American flag there, nor any inscription to show that Robert Edwin Peary, of America, was the first white man to reach the locality known as the North Pole. Whatever Peary left would long ago have drifted with the moving ice, and probably have sunk into the deep, cold sea that fills the hollow in the Earth's surface which exists at its extreme northerly point and far around.

For the Arctic Ocean, which fills the space within the Arctic Circle between Iceland, northern Norway, northern Russia, Siberia, Alaska, northern Canada, and the island of Greenland round to Iceland again, is always being slowly crossed by its floating burden of ice, drifted by currents and winds, and never long stationary over any part of its chilly depths. Sometimes open stretches of sea are left, but by and by the icefields close again on each other and grind and thrust their edges into hummocky ridges. So the North Pole may be where there is open sea, or it may be on a vast icefield.

If we were stationed at the South Pole the surroundings would be widely different from those at the North Pole. We should of course be surrounded by a white world of snow; but we should be standing with land underneath us and far around, on a lofty plateau twice as high as Ben Nevis, and with land stretching in all directions about us, probably to an extent almost equal to that of Australia. Instead of a great sea, as at the North Pole, the South Pole is in the centre of what may be called a continent. Another great difference is that while the Polar sea of the North is closed in by masses of land on all its shores—by Asia, America, and Europe, the Polar continent of the South is surrounded by wide oceans. It is not companioned by any other land of con-

siderable extent. The southern tip of South America is the nearest land mass, and next to that, except some scattered islands, is New Zealand.

In consequence of its distance from other lands, and its bleak loftiness, the Antarctic continent is much more inhospitable than even the Polar ocean of the North. It is fringed round for wide distances, often hundreds of miles, by ice-floes through which ships approaching it have to break their way, and when the land is seen it is found to be fenced off from the sea by lofty cliffs of ice. On landing, voyagers find very few traces of life. No human being lives there. There are no land animals. The birds are of few species—chiefly penguins—and plant life scarcely exists. But the seas that wash its icy shores have a good deal of animal life—walruses, seals, whales, and dangerous forms of predatory fish.

This absence of life on the land within the Antarctic Circle is in striking contrast with what is found in the lands that surround the Arctic ocean. On the large islands that extend from the north of the Canadian mainland into the Polar sea, and are separated from each other by straits and sounds, a very considerable amount of both animal and plant life exists, right up to the edge of the ice-covered sea in the midst of which is the North Pole. In the brief summer, when the sun circles round the sky in one continuous day, and never sets, the snow melts to a large extent on those low-lying islands, and plant life springs up—though not in the form of trees—and affords pasturage for animals that have crossed the ice in winter. The ground is gay with flowers.

The Arctic fox and the wolf are there, and prey on hares and lemmings, which often are numerous. Ermine and other fur-clad animals migrate backward and forward with the changes of the season. Wild reindeer roam without much molestation, and herds of musk-oxen, tenant even the most northerly islands. On the shores, the Polar bear, stalking the abundant seals, is the animal king. A clever hunter can find animal food, ashore and in the waters.

This, however, is not true of Greenland, except around its coasts, for central Greenland is a lofty plateau capped deeply by ice—as lofty as the Antarctic

100 GREAT RIVERS OF THE WORLD



Here are over a hundred of the world's most famous rivers, drawn to scale. The approximate length of each river is given in miles after the name, and the reason some appear out of proportion is that the total length depends on the windings, which cannot be shown here. The total length may be easily trebled by a meandering course. See page 6843.

continent—and bitterly cold. Central Greenland is colder than the North Pole.

One of the features of the Polar regions, in both the North and the South, is that in the cold seas an extraordinary amount of plant and animal life is generated, and floats, often on or near the surface, and on it many of the creatures that live in the sea feed. This life, which has the general name of plankton, nourishes creatures as wide apart in their structure and habits as the huge whale and the little stormy petrel. Especially is this sea food plentiful in the waters where the cold Arctic and Antarctic waters meet the warmer waters of the central oceans. That is why the seas around the Polar regions are among the most remunerative of the Earth's fisheries, and particularly are frequented by the whalers, whose daring captains have greatly extended our knowledge of the Polar waters.

Though to stay-at-home people the cold and the constant dangers of Polar voyaging appear repellent, yet it is a fact that men who have visited these strange "ends of the Earth" are strongly drawn back again to them. All the Arctic lands are not cold at all times of the year, and conditions generally are healthy, ideas to the contrary being largely due to the thought of what severe Arctic conditions would be like if experienced in warmer parts of the world. One of the charms of the Arctic is the marvellous sky-scapes that they present to human wonder. As the Poles are approached the sense of the Earth as a planet in space, surrounded by the mysteries of the Universe, is made stronger, and the busy life of men in the midst of their anxious but often trivial affairs seems strangely commonplace.

Who Were the Seven Wise Men of Greece ?

The seven men the Greeks chose to consider as the wisest in their world were all renowned for their practical wisdom and wit, but the fame of only two of them has come down to modern times. The list of seven names usually given are Thales, Solon, Bias, Chilon, Cleobulus, Periander, and Pittacus, all of whom lived in the sixth century B.C., so that it is clear the number was drawn up long before the days of Socrates and Aristotle. Thales was, of course, the great geometrician and astronomer of Miletus, and Solon is famous

as the law-giver of the Athenians; Periander was a severe and crafty tyrant of Corinth, but of the others little more survives than their names.

Are the Rivers Always Growing Longer ?

A river and its basin are not fixed and unchanging features of the Earth's surface, for rivers are constantly changing their beds, some more, some less, and they become longer or shorter according to whether they are cutting out straighter or more winding channels. It is on this account, and because of the many twists and turns, that it is so difficult to measure the length of a river. Even the length of a familiar and comparatively short river like the Thames varies in the various reference books between 215 and 250 miles, owing to differences in measuring the windings. In atlases a shorter river will often appear, on this account, as long as a river which is hundreds of miles longer. There is no apparent law governing the distribution of rivers except the position of slopes and the amount of rainfall. The Amazon and the Congo are both within the belt of almost constant rains. A big river must, however, lie in a large area of land, as Columbus knew, for when he entered the mouth of the Orinoco he at once declared that the country lying southward was a continent. A map of 100 rivers will be found on page 6847.

How Do We Get the Word Dunce ?

The learned doctors of the Middle Ages were fond of holding long arguments, often on points of no importance, and sometimes on subjects which seem to us ridiculous. Among the great doctors of those days, Thomas Aquinas was the most famous, and he had many admirers who did no original thinking for themselves, but followed him in everything he said and wrote. At last rose a Scottish scholar who did think for himself, and would not follow Thomas Aquinas. This greatly annoyed the disciples of Thomas, and they hurled all kinds of ridicule and abuse at the new doctor and his followers. The Scottish doctor was born at Dunse, in Berwickshire, and he was called Duns Scotus. His disciples were called in ridicule, by the followers of Thomas Aquinas, "dunse men," and then "dunces," and even now, if we want to say a man has no real knowledge, we call him a dunce.

Why is British Money Called Sterling ?

We often come across the word *sterling*, used to denote our British money. Other countries have no special name for their money. United States money is referred to as dollars, that of France as francs, Italy's as lire, India's as rupees, and so on. But all over the world our money is called sterling.

The origin of the word *sterling* is not certain, but it is generally thought to have come from *Easterlings*, the medieval name for the merchants of north-east Germany, some of whom settled in London in the 14th century and founded a *Hansa*, or guild. The coins they minted and issued came to be considered as the most reliable sort of money one could have, for they were always of the same weight and quality of metal. In those days a "sterling" was a silver penny, 240 of which went to a "pound sterling."

The word *sterling*, however, was used for certain coins before the German merchants came to London, and it has been suggested that it is derived from the old English word *starling*, meaning "a little star," which was a device on some coins of the time of William II. It is also thought by some to have come from the birds on the coins of Edward the Confessor.

What is a Jubilee ?

The term *Jubilee* has come to mean the fiftieth anniversary of any famous event, the sixtieth anniversary being known as the *Diamond Jubilee*, and the twenty-fifth as the *Silver Jubilee*.

The word *Jubilee* is derived from the Hebrew name for a ram's-horn trumpet, *yobel*, because this instrument was blown to announce the beginning of every fiftieth year in Jewish history. There is a full account of this Year of Jubilee in the twenty-fifth chapter of *Leviticus*. It began on the Day of Atonement after harvest, and during this period the land was allowed to lie fallow, all slaves were set free, everyone returned to his family, and all property, except that within a walled city, was returned to its original owners or their descendants. It was instituted to celebrate the release of the Hebrews from their bondage in Egypt, and probably was intended to check the growth of a land-owning class and to preserve the family as a unit.

Years of Jubilee from Christmas to

Christmas were instituted by the Popes; during them full pardon was granted to all who repented, confessed, and visited the churches of St. Peter and St. Paul at Rome. At first the Jubilee was for each hundredth year, but from 1470 it has been held every twenty-fifth year.

Who Wrote the National Anthem ?

It is not actually known who wrote the original words or the music. At the beginning of last century a Richard Clark stated that an Elizabethan named John Bull composed the tune. This may or not be so. The writer of the words was possibly Henry Carey.

The National Anthem was originally in Latin and was sung in the time of the Stuarts. An English version appeared after the exile of James the Second, and our modern English version was written in opposition, hence the reference to "knaveish tricks" and "politics." The first line ran "God save our Lord the King," but it was altered to "God save our gracious Queen" when Victoria ascended the throne. The words of the Anthem are given on page 6889.

What Character in Shakespeare has the biggest Speaking Part ?

Hamlet, Prince of Denmark, has many more lines than any other character in the plays. He speaks 1569 lines, but few actors recite them all on the stage today. Richard Crouchback, a man of action and therefore a contrast to the philosophic prince, comes next with 1161 lines. Here is a list of characters and the number of lines Shakespeare wrote for them:

Hamlet ..	1569	Touchstone ..	516
Richard III ..	1161	Imogen ..	541
Iago ..	1117	Helen (All's Well) ..	479
Othello ..	888	Isabella ..	426
Coriolanus ..	886	Desdemona ..	389
Timon ..	863	Mistress Page ..	361
Lear ..	770	Viola ..	353
Richard II ..	755	Volumnia ..	315
Brutus ..	727	Beatrice ..	309
Macbeth ..	705	Lady Macbeth ..	261
Cleopatra ..	670	Katherine (Shrew) ..	220
Prospero ..	665	Miranda (Tempest) ..	142
Romeo ..	618	Perdita ..	128
Petruchio ..	585	Cordelia ..	115

It will be seen that Shakespeare's women characters are not so talkative as his men. Cleopatra heads the list with 670, but Cordelia's 115 are enough to endear her to every reader of *King Lear*.

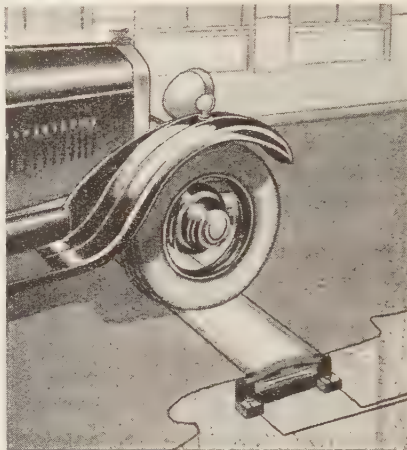
HOW DOES TRAFFIC WORK ITS OWN SIGNALS?

Many automatic traffic signals are actually controlled by the traffic itself. If there is a pause in the flow of traffic on the road which has the right of way the signal lights automatically change to give the right of way to the other road *if traffic is waiting to cross over.*

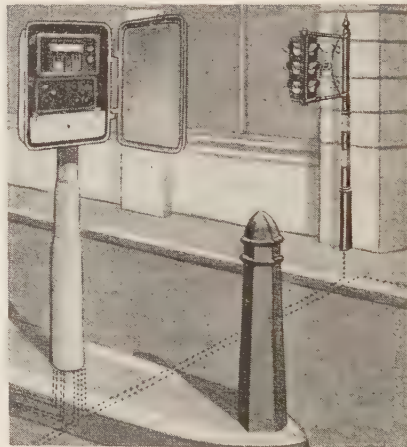
In each road is a movable section, or detector, as seen in the first picture on this page. The weight of a vehicle passing over the detector closes a contact and completes an electrical circuit, sending an impulse of current to the control-box, which is seen in the next picture. In the control-box are a number of relays and switches which control the lights.

In a relay a current passing through a coil of wire wound round a core of soft iron magnetises the iron and attracts the hinged metal armature on the right of the relay. This forces together the contact springs mounted above, and so makes a circuit for a current to flow in another path. Immediately the current ceases to flow in the coil the coil ceases to be a magnet, and the springs open and force the armature to its normal position.

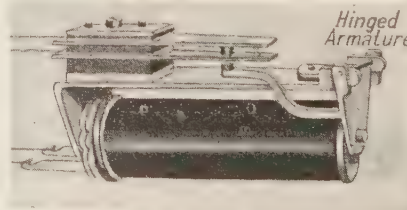
In the solenoid are a similar coil of wire and a core of soft iron. But the core slides in and out of the coil, being pulled into it when the current is flowing and pulled out



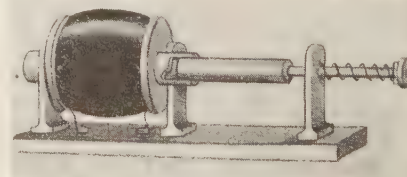
A car passing over the detector, a rubber-covered movable strip in the road. Each time it is depressed an electric contact is made.



The control-box containing the electrical apparatus which operates the coloured signal lights seen on the right of the picture.



One of the relays employed in the circuit. It is a kind of electro-magnetic switch.



The solenoid, another form of electro-magnetic switch that operates the lights.

of its normal position by a spring when the current ceases. These in-and-out movements operate a switch.

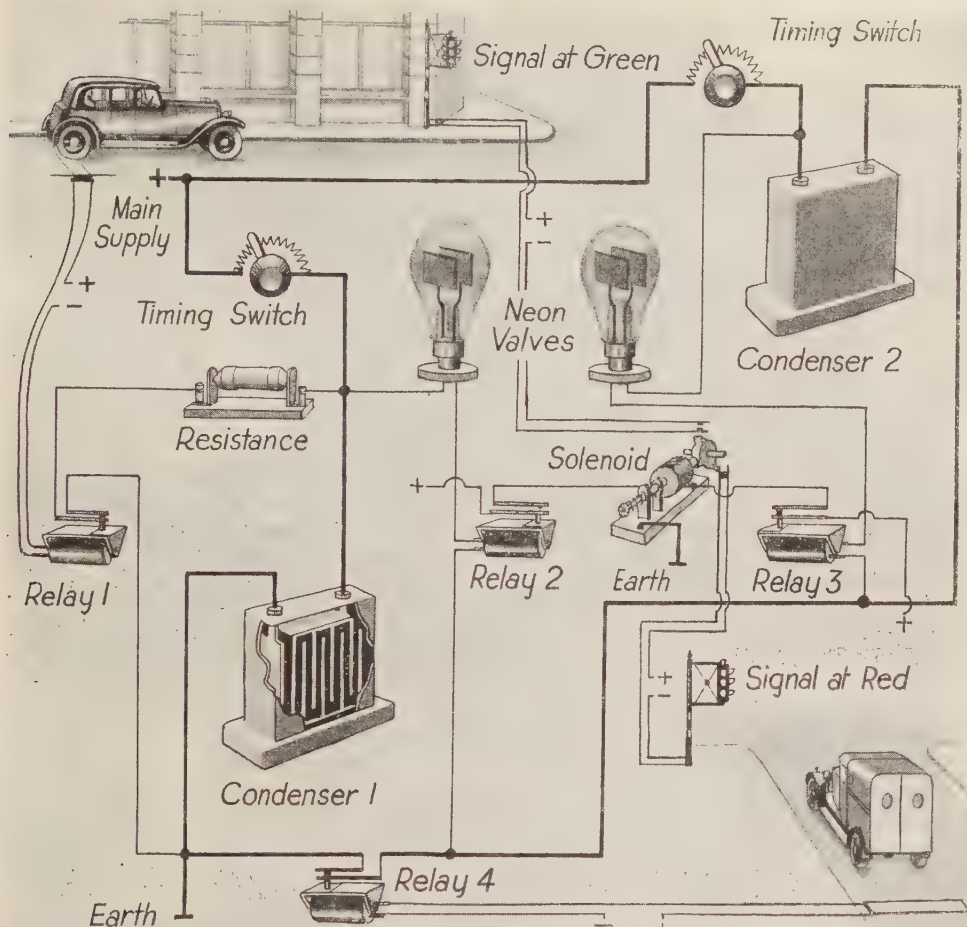
The picture on the opposite page shows how the system operates.

The signal at green shows that traffic may pass. Condenser 1 is fully charged with electricity from the main supply, and each time a vehicle crosses a detector and operates Relay 1 a certain amount of current is allowed to run to earth through the resistance. This loss is slowly made good again from the main supply, and until it is made good the right of way cannot go to the other road.

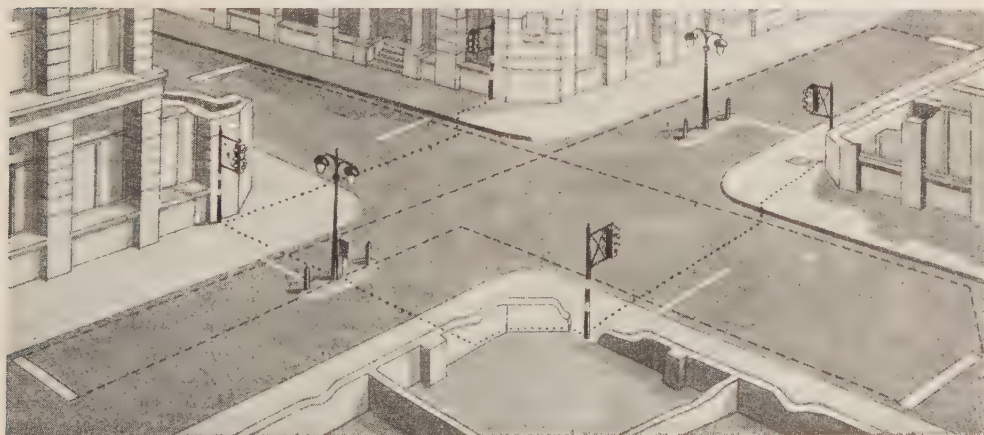
This happens if there is a seven-seconds pause in the flow of traffic, which means that no impulses have been received from the detector for that period. At the end of the pause the condenser is fully charged. If a vehicle crosses a detector on the other road it operates Relay 4, and the current is allowed to run to earth by way of the neon valve and the coil of Relay 2. The relay makes a circuit which causes the solenoid to operate and change the lamp signals, so giving the right of way to the waiting traffic.

The other neon valve, Condenser 2, and Relay 3 form a limiting circuit which prevents one road from holding the right of way to the exclusion of the other; but if

HOW TRAFFIC CONTROLS ITSELF



A simplified picture-diagram showing what happens in the control-box of the robot traffic signals described on the opposite page. To avoid complication only two sections of the crossing are shown.



The automatic traffic-control system at a cross-roads, with the buildings cut away to show all four detectors and the white lines beyond which waiting vehicles may not pass. These pictures have been prepared with the help of the Automatic Electric Company of Liverpool, makers of the Electromatic traffic control equipment.

there is a seven-second pause in the flow of traffic on one road, waiting traffic on the other is given the right of way.

Should a vehicle cross a detector while the right of way is on the other road, and before the expiry of the maximum limiting interval, the relay is prevented from being released by a locking circuit. The limiting interval may be fixed as needed by means of a timing switch.

In the last picture the broken lines indicate the wires from the detectors to the controller and the dotted lines wires from the control box to the lanterns.

How Fast Do Animals Travel ?

Though man has copied the shapes into which Nature has moulded her creatures to give them speed over the land, in the air, and under the water, man himself unaided is no match for the fastest members of the Animal Kingdom. He can run a hundred yards at a speed of about 22 miles an hour, but an angry elephant can cover a hundred yards at 20 miles an hour, and a lion can charge nearly as far at 60 miles an hour. A lion has actually been timed at 62 miles an hour for three seconds. An antelope has maintained this speed for three miles. The cheetah could catch the antelope in a course of a few hundred yards, for this Indian cat has kept up with a car at 80 miles an hour. The racehorse at 35 and the greyhound at 37 miles an hour seem slow movers in contrast.

The mammal of the sea, the whale, swims at 24 miles an hour, but his foe, the swordfish, is much faster. The average cruising speed of the pike is nine miles and of the salmon seven miles an hour. The speeds of wild mammals and fishes have not been so carefully measured as those of the birds. There are a few birds capable of flying over 100 miles an hour, which, of course, is exceeded when gravity aids them in a swoop. Birds have two speeds, the normal used in migration, and the rapid used in attack or escape. Thus a swift normally flies at 70 miles, but can attain a velocity of 106 miles an hour. Dr. Fraser Darling once timed a golden eagle chased by falcons for three miles at 120 miles an hour on an ascending course, the eagle eventually escaping by a terrific swoop. Even stay-at-home birds like starlings travel fast, both Miss Frances Pitt and Colonel Richard Meinertzhagen

estimating their speed at over 45 miles an hour. For speed over a long distance the lapwing probably holds the record. Lapwings marked and liberated in England were found in Canada a little over 24 hours later. With a following wind they had flown at 100 miles an hour.

Colonel Meinertzhagen, a famous ornithologist, has used anti-aircraft instruments in compiling a table of the speeds at which birds can fly. Here are some of his results, the figures indicating miles per hour.

Lammergeier	110	Kestrel	43
Swallow	106	Partridge	40
Lapwing	80	Rook	40
Duck	59	Raven	39
Goose	55	Pigeon	36
Stork	48	Finch	33
Sandgrouse	47	Pheasant	33

Even that gawky flightless bird the ostrich, can attain a remarkable speed. It is faster than a horse, and has reached 40 miles an hour when timed on a track.

What is the Wateler Peace Prize ?

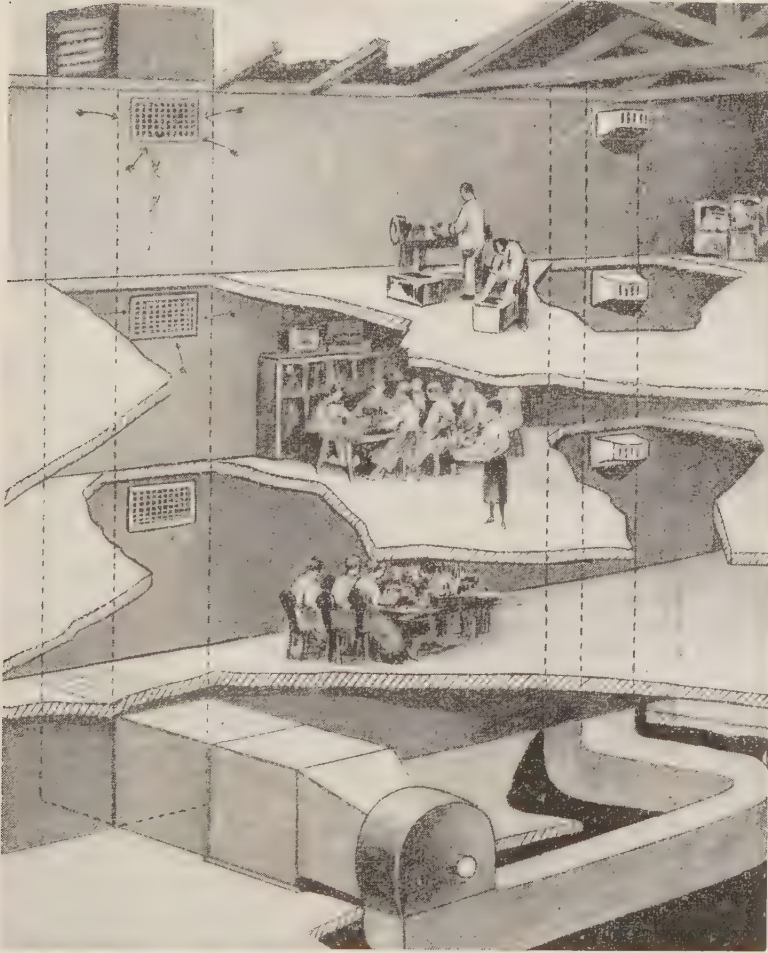
This is an annual prize of about £2500 awarded by the Carnegie Foundation to the person who has rendered the most valuable services to the cause of peace or who has contributed to finding means for the combating of war. The money is the interest from property left to the Trustees of the Foundation by M. Wateler, a Dutchman.

What Is Conditioned Air ?

Most big factories, public buildings, theatres, and so on, have an air-conditioning plant which ensures a continuous supply of pure air which may be heated or cooled as desired. Certain manufactures demand an atmosphere of a particular degree of humidity which Nature does not always supply; so the air-conditioning plant is made to supply throughout the factory air of the desired humidity. With the aid of this apparatus we can, in other words, make our own weather, and the pictures on the opposite page explain how this is done.

The Underground Railways are given a supply of conditioned air and so are the holds of vessels which carry fruit from the far corners of the world. Gramophone, broadcasting, and film studios, too, require a control of the temperature and humidity of their atmosphere. In fact, the use of conditioned air is ever-increasing in modern times.

MAKING WEATHER FOR A FACTORY

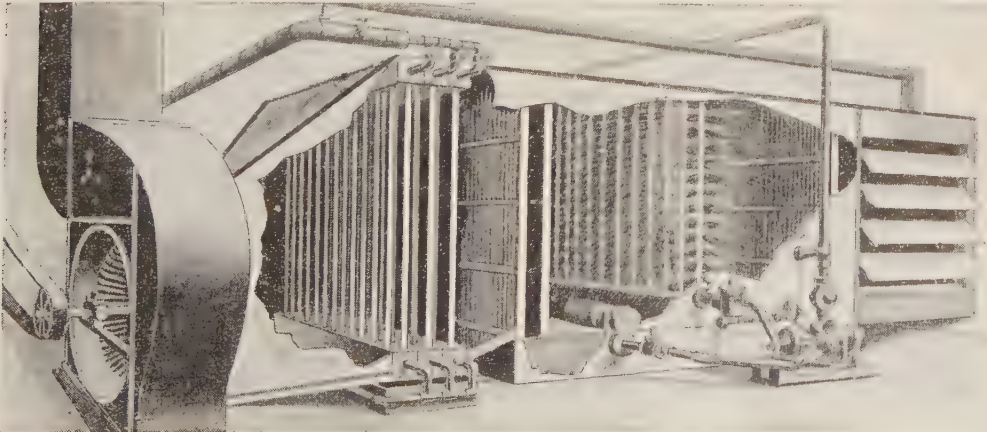


A scene in a silk factory, with a row of diffusers above.



Here is a factory of three floors which is supplied with conditioned air by the plant shown below. Air is drawn down the shaft on the left, through the apparatus, and is pumped up the shaft on the right, entering the rooms through the diffusers.

The fan which draws the fresh and used air through the apparatus.



This plant, known as the Carrier Humidifying System, is usually in the basement of the building. The suction fan on the left, shown uncovered, draws air through the openings on the right, sucks it through the humidifier, where sprays of water saturate it, and then through the steam heater, and finally drives it up the shafts to the rooms. By regulating the apparatus, air of any temperature, hotter or cooler than that outside, or of any desired humidity, can be obtained.

Why, from a Train, do the Telegraph Wires Seem to Go Up and Down ?

The telegraph wires stretching from pole to pole do not hang perfectly straight even when tightly drawn, but sag in the middle, as a tow-rope stretched from tug to ship will do. They are so nearly horizontal, nevertheless, that the eye of anyone standing still and looking at them from a distance cannot readily detect the looping effect. But when the eye is taken very quickly along by the side of the wire the falling away from the horizontal straightness is detected and exaggerated, so that the apparent up-and-down motion of the wire is optically increased in such a way that it can almost be called an optical illusion, though actually it is founded on fact. In the same sense, if not quite the same way, raindrops falling straight down seem, when the eye looks at them from a moving train, to be slanting towards the onlooker. That is also an optical illusion arising from the train's motion.

How Can a Bird Fly Though it is Heavier Than Air ?

It is a fact well known to everybody that when a bird in flight is killed by a shot it falls to the ground. In other words a dead bird obeys the force of gravitation exactly as a hailstone, or a raindrop, or a meteorite must do. The force of gravitation is always acting, even on the living bird. It is therefore plain that some force is produced which acts against gravitation, balances it when the bird maintains its level in the air, or more than balances it when the bird rises in the air. This force is produced by the life of the bird. It can be produced in things that are not alive, as in an aeroplane that we cause to fly. In any case, there is produced a force which acts in the opposite direction to the force of gravitation, and is, for the time being, superior to it.

In the case of the bird the necessary force is produced by burning the sugar in its muscles; in the case of the aeroplane it is produced by burning fuel in the engine. Foolish people sometimes speak as if these were cases of defying one of Nature's laws, but they are nothing of the sort. Gravitation goes on acting on the bird whether the bird rises or falls; but when the bird rises into the air a greater force is being successfully opposed to the force of gravitation.

Can Chemistry Build Up Life ?

No; chemistry certainly cannot build up living matter. But we ought to know how far chemistry can go in this direction. It was long believed that none of the things made by life, such as sugar or alcohol, could possibly be made in any other way; but nearly a hundred years ago a compound called urea, which is one of those made inside our bodies, was made by a chemist *outside* his body; and now chemistry can build up thousands of compounds which are made by living things; and can build them up from their separate elements. This teaches us that chemistry inside living things cannot be so very different from chemistry outside them.

No doubt chemists will some day be able to make all the compounds that compose living matter, or protoplasm, and then call the mixture protoplasm; but it will be only *dead* protoplasm, we may be sure. Living protoplasm is far more than a mixture of proteids and sugar and salts and water. It has an architecture, and is as much more than a mixture of these things as a cathedral is more than a heap of bricks. The bricks need a builder to make them into a cathedral, and the compounds that compose living matter need a builder to make them into living protoplasm. Otherwise it will be only protoplasm, without the property which all living protoplasm has, and which is the power of growth.

What is Caste ?

Caste is a term for the division of society into clearly marked grades. It is most complete in India, but has existed in a less degree in other lands, as between Patricians and Plebeians in Rome. From remotest history India has had four chief castes—the Brahmin, or priestly caste; the Kshattriya, or warrior caste; the Vaisya, or mercantile and agricultural caste; and the Sudra, or artisan and labouring caste. Sudras represent, historically, the black natives who were conquered by the Aryan invasion and became enslaved to the other three castes.

These chief castes branch into secondary castes, which represent often special professions or occupations. Outside all castes are the pariahs, or outcastes. The system of caste delays social improvement, but to the unambitious and contented it gives a certain degree of easy security.

ARE THE BIRDS THE FARMER'S FRIENDS ?

There is a persistent belief in the countryside that the birds considerably reduce the produce of the farmer, the fruit-grower, the market gardener, and even the humble cultivator of flowers.

For many years, however, naturalists have denied this general attack on the birds and have been collecting evidence which proves conclusively that birds do infinitely more good than harm. They are a farmer's best friends, his army of workers, and what they take from him is merely their wages for the best service they could render him.

Nature, when man does nothing to disturb her scheme, establishes a balance among all forms of life, and in the natural order of things the birds have their place. One of their most important functions is the keeping down of insects whose ravages would otherwise wreak enormous damage on all vegetation.

By cultivating a large part of the Earth man has actually provided a new food supply for myriads of insects, and he can do little, even with his chemical sprays, to keep them in check. A natural enemy is needed for this work, and though some insects, like ichneumon flies, prey on others, the insect-eating birds are their real foes. The urge of Life itself compels it, for the nestlings of almost every kind of wild bird must be fed on soft animal food, and this their parents bring them in the form of caterpillars and larvae at that very season of the year when these creatures are most abundant and most harmful to plant life.

The exceptions are few, the more notorious being the common wood-pigeon, which not only feeds on grain from the nest but spreads injurious weeds by dropping their seeds on cultivated land; and the common sparrow, a voracious feeder on the corn crops. Other familiar birds, like the rook, the blackbird, the starling, and the bullfinch, undoubtedly do harm at certain seasons, but we must not pass sentence on any species without considering what it feeds on throughout a whole year.

One of the closest students of the feeding habits of birds was Dr. W. E. Collinge, who tabulated the results of years of investigation so as to show quite clearly the percentages of all the food consumed by our familiar wild birds. He distinguished

between those insects which are injurious to man's food and those not, between the seeds of food plants and those of weeds, between the wild fruits and those which are cultivated for food, and so on.

Out of the 280 wild species of our country about 85 affect agriculture, 50 of these feeding entirely on insects. These 50 include the swallows, martins, swifts, fly-catchers, wagtails, woodpeckers, and wrens; the plover, wheatear, treecreeper, the nightingale, the nightjar, and the cuckoo. The hedge-sparrow gulps down one beneficial insect with every 20 injurious ones, but that is the total harm it does. The kestrel is guilty of varying its general diet of mice, moles, and insects with a few nestlings which would otherwise grow up to help the farmer.

With a view to broadcasting the knowledge which Dr. Collinge acquired, the Royal Society for the Protection of Birds issued a series of coloured drawings of our familiar birds, each printed on a card with a scale of its food, based on Dr. Collinge's investigations. Omitting the birds which are entirely innocent, we give a list of nine showing the proportions of their food which we may count as helpful or harmful to agriculture. Let us divide the food into good and bad from man's point of view. The figures given, it will be noticed, are percentages.

	Good		Bad		Neutral	
Barn Owl	..	82	..	13	..	5
Blue Tit	..	78	..	10	..	12
Chaffinch	..	72	..	18	..	10
Great Tit	..	66	..	10	..	24
Jackdaw..	..	48	..	23	..	29
Kingfisher	..	15	..	7	..	78
Skylark	..	80	..	13	..	7
Song Thrush	..	37	..	17	..	46
Yellowhammer	23	..	11	..	66	

It must always be remembered that a bird which eats the farmer's grain eats also his insect enemies, at a time, too, when the farmer can do little to protect himself against the attacks of these troublesome pests.

The conclusion of the whole matter is that there are very few species indeed which require suppression (say, the wood-pigeon and the common sparrow), and that the farmer with the shot-gun should look well before he pulls his trigger, for he is more likely to be shooting his friends than otherwise.

Why Have Foreign Parliaments Such Strange Names ?

We frequently read in the news from foreign countries that a law has been passed by an institution with a curious name such as Riksdag, Storting, or Cortes. These are the names by which their Parliaments are known in their respective countries, and they often have an interesting history. Even our own word Parliament has an interesting origin, meaning a speaking together, from the Latin *parlare* which comes from two Greek words meaning *to cast side by side*, which is essentially what is done with points of view in discussion.

The word for *day* enters into many names of Parliaments because their meetings are called for a set day. The word Diet, used for Japan's old Imperial Diet and for many historical assemblies, means this. Thus we have the Danish Rigsdag, the Swedish Riksdag, and the Dutch Rijksdag, in which the first syllable means the realm. The Anglo-Saxon word *thing* in its meaning of council comes into the name of Iceland's Althing, the council or assembly of all, and of Norway's Parliament, the Storting, in which the first syllable means great.

The name of the former Parliament of Russia, the Duma, means council or court, our word doom or judgment coming from the same source. Spain's Cortes is allied to our court. The rat which we find in the Swiss names for their two Houses of Parliament, Standerat and Nationalrat, also implies court or council; we find it again in the Rathaus, the council-house or town hall, of Germany.

Why Does a Steel Ship Float ?

Wood floats, as we know, and steel does not. But if we imagine the steel ship turned into a closed box full of air it is easy to imagine it floating. It is then the steel and air in it that are floating. So long as the ship and the air contained in it do not weigh more than a body of water of the same size it will float. That is an important principle, called displacement, which was discovered by an ancient Greek called Archimedes.

If we have a basin full of water and put in it a toy boat some of the water flows over the side of the basin; that water is displaced.

Suppose it were possible to put a closed-up ship under water without letting any water get in. The ship would push aside, that is, displace, a certain quantity of water. Then, if we could weigh that displaced water we should find it was so many tons heavier than the ship. Therefore the ship, whether of wood, iron, or steel, floats because its weight is less than that of the water it displaces.

Who Was Parson Thwackum ?

Parson Thwackum is a character in Henry Fielding's famous novel Tom Jones, which was published in 1749. Thwackum was a precise cleric, honest and learned but very selfish and bad-tempered.

He has become proverbial for a clergyman with a very narrow outlook. For instance, to Parson Thwackum religion meant the Christian religion, which meant Protestant religion, that is to say the religion of the Church of England excluding all others.

What is a Wind Scale ?

The speed and pressure of the wind are important for the calculations of both mariners and engineers. A recognised name for a wind blowing at a certain speed was found necessary many years ago, and Admiral Beaufort in 1809 drew up a scale which today is still recognised as one of the bases of meteorological work. His descriptions of the wind have a meaning much more exact than the loosely used words zephyr, breeze, gale, or cyclone. The Beaufort scale ranges from 0 to 12, and gives the name for the wind blowing at a given number of miles an hour.

Beaufort number	Speed of wind	Name of wind
0	under 2	calm
1	2-4	light air
2	4-8	slight breeze
3	8-12	gentle breeze
4	12-17	moderate wind
5	17-22	fresh wind
6	22-28	strong wind
7	28-34	high wind
8	34-41	fresh gale
9	41-49	strong gale
10	49-57	whole gale
11	57-65	storm
12	over 65	hurricane

When blowing at 24 miles an hour wind has a pressure of one and three-quarter pounds a square foot, but at 68 miles an hour this pressure amounts to 14 pounds.

What are the Apocrypha ?

The Apocrypha are books written in very early times and put forward for acceptance as Scriptures, either in the Old Testament or the New Testament, but not accepted by the whole, or in many cases by any part, of the Christian Church. The most generally known of these books are the Old Testament Apocrypha, as formerly printed in Protestant Bibles between the Old and New Testaments.

These Hebrew books were translated into Greek in what is called the Septuagint version, but were not accepted by the Jews of Palestine as sacred Scriptures. They are accepted as Old Testament books by the Roman Catholic Church, if they are included in Jerome's Latin translation from the Septuagint known as the Vulgate. Thus, 1 Maccabees and 2 Maccabees are included, and 3 Maccabees and 4 Maccabees are not. The Eastern (Greek) Church also accepts them. There is a great deal of other apocryphal Jewish literature of the Old Testament period which is neither accepted as authoritative by the Jewish religion nor by any branch of the Christian Church. Furthermore, many apocryphal gospels, histories, epistles, and visions, written in Christian times and claiming to come from apostles and others mentioned in the New Testament, are rejected as Scriptures by the Church, though some have a historical value.

A great deal of apocryphal literature produced by the Jews in the centuries just before Christ, and by Christians in the centuries immediately after, was of the kind called apocalyptic, or visionary. Examples of writing of this kind included in the Bible are the prophecies of Ezekiel in the Old Testament, and Revelation in the New Testament.

What is a Ghetto ?

In the Middle Ages the Jews in Europe were compelled to live separately from the Christians, and practically every city of note had its Jewish quarter, called the ghetto. These were first started in Italy about the middle of the eleventh century, the name being from the Italian *borghetto*; but how it arose is not certain. Medieval ghettos were enclosed by walls, with the gates locked at night; Jews were forbidden to leave their own quarter after dark, and on Sundays and holy days. Within

the walls, however, they were allowed comparative freedom. The ghetto system endured into the middle of the nineteenth century, but nowadays a ghetto means merely a quarter where many Jews live.

Where Did the Alphabet Come From ?

There are many alphabets in which each character, or letter, is a symbol for a sound or a combination of sounds. New alphabets have to be made to indicate sounds in languages that have not been written before. Where our own alphabet came from is as yet a question to be settled by learned men when they understand more about the languages in use in very early times around the eastern shores of the Mediterranean Sea. There is little doubt that the Greeks borrowed their alphabet from the Phoenicians, the people who chiefly carried on the sea trade of the Mediterranean. Did the Phoenicians invent our letters? Some have held that they received them in part from the Egyptians. Others say that the probability is that the people called in the Bible the Philistines found our alphabet, or something resembling it, in use in the island of Crete during the Minoan period, and that the Phoenicians, who were akin to the Philistines, borrowed it from them, and circulated it along all the Mediterranean coasts. It is necessary to have more examples of the writing of ancient peoples round the Eastern Mediterranean, and to compare them, before we can say with confidence how far the Minoans, the Egyptians, and the Phoenicians were concerned in forming it.

Which are the Smallest Countries in Europe ?

There are three independent European countries each with an area of less than 100 square miles—Liechtenstein, San Marino, and Monaco.

Liechtenstein is an ancient Principality formerly associated with the Holy Roman Empire, lying on the eastern side of the Rhine valley as it approaches Lake Constance. Here reigns Prince Franz Joseph the Second, the hereditary ruler of about 62 square miles of Alpine pasture land, in his castle of Liechtenstein in the picturesque little town of Vaduz. When the German Confederation was dissolved in 1866 Liechtenstein became independent and since 1868 it has had no army. It is

mainly agricultural, and is commercially joined with Switzerland. The population numbers about 12,200. Its popular governing body, the Diet, has 15 members.

San Marino, a little Republic of 38 square miles and some 12,100 people, inland of Rimini on the Adriatic Sea, claims to be older, as a State, than any other country. Admittedly it has existed since the ninth century. It is governed by a Council of 60, elected every four years by popular vote. The sixty meet twice a year, in April and October, and choose two of their number to be Regents, or Reigning Captains, for six months. When their six months of office is over they cannot be elected again for three years. The town of San Marino has about 2000 inhabitants. The little Republic has a citizen army of 900 men.

Monaco, a principality on the French Riviera coast, with an area of under 8 square miles, consists of three adjoining towns with a total population of about 19,200. The towns are Monaco, La Condamine, and Monte Carlo.

Another of these pocket states is the Republic of Andorra, in the Pyrenees, which although larger in size (191 square miles) has a population of only about 5200. Although it is self-governed, Andorra is under the joint suzerainty of the head of the French Republic and of the Spanish bishop of Urgel.

What is the Revised Version of The Bible ?

All people in the world today, except the few who can read ancient Hebrew and ancient Greek, must read the Old and New Testaments in translations. At first the Hebrew of the Old Testament was translated into Greek. Then the Greek and the Hebrew were translated into Latin, and the first complete English translation was made from Latin into English. But as time went on other translations were made direct from the original Hebrew and Greek, and greater correctness was secured. More ancient copies of the Scriptures in the original languages were found and studied until, at last, at the beginning of the seventeenth century, it was felt that the best scholarship of Britain should be brought together to make a translation as correct, and as fitly worded, as was possible. So 47 scholars revised the whole Bible afresh,

and it was published in 1611 as the Authorised Version. This translation was based on earlier English translations. A Bible called the Bishops' Bible was taken as the foundation. It had been published in 1568. But that was a revision of another Bible, the Great Bible, published in 1539, and the Great Bible had been a revision of an earlier Bible known as Matthew's Bible. That, again, had been made up from translations by William Tyndale and Miles Coverdale. Really, Tyndale's Bible, supplemented by a Bible by Coverdale, was the far-off translation which, revised again and again, made the broad foundation for the Authorised Version. But the 47 translators went back, in all their work, to comparisons with the Hebrew and Greek in which the Scriptures had originally been written. Also, they had by them the Roman Catholic translation known as the Rheims Version.

The Authorised Version of 1611 was almost universally used by British Protestants for 270 years; but toward the close of this period it was felt that men had now much more knowledge of Hebrew and Greek than the 47 translators who produced the fine Authorised Version. They also had many more ancient manuscripts from which to secure the best forms of the original text by comparisons. Translations of parts of the Bible were appearing from time to time showing that the Authorised Version did not always express the true meaning of the ancient languages. In short, knowledge had increased, and another revision was necessary to free the old version from errors. So, in 1870, preparations began for forming two companies of learned men, one to revise the Old Testament of the Authorised Version, and the other the New Testament, and a Revised Version was published, the New Testament in 1881, the whole Bible in 1885, and the Apocrypha in 1895.

The Revised Version is obviously the more correct, but the music of the language is less sustained. Many lovers of the Bible feel that the revisers made too many small unnecessary changes, and shirked greater necessary changes by putting them in the margin as alternatives. While the British Revised Version was being produced an American Protestant Revision Committee was doing parallel work in the United States.

The Story of the Beautiful Things in the Treasure-House of the World

The Art of Ages Past

WE have looked in these pages at the story of Art in its various phases. We have looked at the work of the painters whose pictures have become familiar to the world, some of them for centuries. We have looked at the work of the sculptors, who have taken the marble from the rocks and have fashioned it into wonderful and beautiful shapes. We have glanced at the work of the craftsmen who made beautiful things in metal and ivory and glass and wood. We have been able only to suggest the marvellous work that men have done in all these ways; but we have been able, we hope, to make it clear that the history of Art is one of the most enthralling stories in the world. Here we look at another chapter in this history, the story of the digging up of the buried remains of the ancient world and of the light it throws upon the arts and crafts of those days of long ago.

DIGGING UP THE ANCIENT WORLD—1

FOR the disclosure of buried civilisations and the lost peoples who created them only one thing can be done: it is to dig hopefully and diligently where their suspected localities once were, so as to come on evidence of them. But if and when they are found there is the harder task of interpreting their meanings.

We are certain to come on vast quantities of broken pots and shards, yet there is danger in this profusion, for they were thrown into the refuse pit because they had so little value. It is safer to pin our faith to objects which were most valuable or most precious to those who preserved them, and to what we must believe was the genius or craft of those who made them. Thus, in the Tomb of the Sumerian Queen at Ur of the Chaldees we learn from her gold-leaved coronet, her jewels, her many stringed golden harps, nearly all that can be told of the Queen she was and the beliefs of her people who created the treasure about her to go with her to that silent land from which no traveller returns.

The same tradition re-appears a thousand years later, carried no doubt from Mesopotamia to Egypt, in the Tomb of Tutankhamen, where everything the Pharaoh could need on his last long journey, his golden coffin, his golden crown, his weapons, and his furnishings, would be at hand if he wanted them. It is visible even two thousand years

later, strangely enough, in the Sutton Hoo Ship burial in Suffolk, where a Scandinavian king's equipment, to the last detail, is buried with him in his sailing ship by the river. But yet another significance attaches to this burial. It is the only one in England, though Norway has others. It is the recognition that the Valhalla of the old gods has gone, to admit the coming of the Christian faith into our island.

Sir W. Flinders Petrie believed that the first great people were those of Elam in Mesopotamia, a land now known as Iraq. That may be considered likely, because this region was settled and fertile before almost any other, and it afforded room for a large and peaceful population. The Elamites were making beautiful carvings of ivory when Egypt was populated by a people who belonged to the Older Stone Age.

The next great civilisation was that of Egypt, to which, before it was established, the carvings and pottery of Elam were coming by way of Palestine. Professor Petrie exhibited, at University College in London, dishes, bowls, beads, and pottery figures made by a people who came, perhaps, from the north through Palestine 9000 or 10,000 B.C. He called their civilisation the Badarian culture.

We may suppose that there were several places where civilisations sprang up and flourished independently, and that many

PICTURES · STATUES · CARVINGS · BUILDINGS · IVORIES · CRAFTS

centuries after such beginnings the civilisations mingled. Thus, after the Egyptian world was developing, Crete appears as an independent civilisation which can be traced back to 4000 B.C., when the Egyptians were building Pyramids, but it may have been older than that. Crete waxed and waned with the Egyptians; it was great in 3000 B.C. and at its greatest in

1500 B.C. After this China appears with a civilisation of its own which it may have taken from Persia or Babylon, but which has always had a character of its own. Next after that was the North Syrian, which the Egyptians, to their surprise, found well established when in 1500 B.C. they invaded the country by way of Palestine and met the Hittites.

WHAT HAS BEEN FOUND IN EGYPT

The three stages of the disclosure of an ancient civilisation are the exploration of the country where it flourished, the excavation of the sites of its greatness, and the reading of the meaning of the relics unearthed.

Egypt drew the explorers from very early times, and some, like Herodotus, described remains, such as the great irrigation lake of Moeris, which nobody else was able to find afterwards. But the first systematic exploration of Egypt began with a military expedition. Napoleon in 1798 took to Egypt with his Army of Conquest a number of draughtsmen and engineers whose work endured when Napoleon's dream had faded. The work was well done; the descriptions of Egypt continued to appear from 1809 to 1813. A second survey by the great French archaeologist Champollion, aided by Rossellini, was made by 1828. This made known all the country below Aswan to Alexandria. Later in the century Lepsius surveyed the other part of Egypt from Nubia to Khartoum, as well as Memphis and the Egyptian mines in the Sinai Peninsula.

The deciphering of the inscriptions on the antiquities laid bare went on even while the country was being explored. The great discovery of the Rosetta Stone described on page 6596, thanks to the labours of De Sacy, Akerblad, Dr. Thomas Young, and especially to the work of Champollion, provided the key to the hieroglyphic alphabet, so that all the written history of old Egypt as inscribed on its monuments could be read.

Mariette, another Frenchman, was the pioneer excavator in Egypt. He disclosed the Temple of the Sphinx at Gizeh and the great cemeteries at Sakkara; the temples at Abydos, at Der-el-Bahari, and at Edfu. He laid bare the vista of the columns of Karnak.

Gaston Maspero succeeded Mariette, and in 1881 he discovered the hiding-place of royal mummies which thousands of years before the priests had secretly removed from the Valley of the Tombs of the Kings to preserve them from the sacrilege of robbers. But though the plan saved them for many hundreds of years the robbers found the burial place at last, and slowly rifled it, selling the relics cautiously to travellers. One day some pages of an illuminated papyrus were shown to Maspero, who knew at once that they could have come only from a royal tomb and learned that they had been bought at Thebes. Suspicion pointed to four Arab brothers who lived in some deserted tombs. Maspero offered a heavy reward, and the Arabs agreed to lead the way to the hidden tomb near Der-el-Bahari, where Queen Hatshepsut built her famous valley temple. It was a perilous and mysterious way, too, a black shaft forty feet deep leading to a tunnel where the explorers had sometimes to go on hands and knees. A corner was turned, another passage, a flight of steps in the rock, and at last they found a chamber piled and lined with mummy cases.

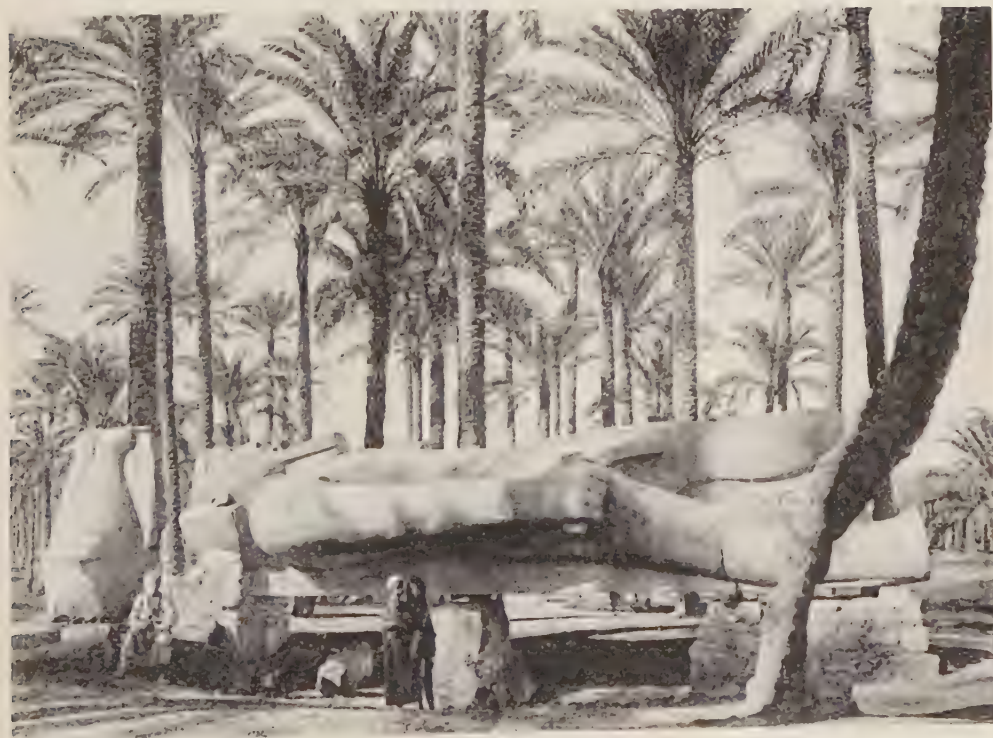
Another black tunnel sloped downwards to a chamber filled with such an assemblage of royal mummies as no Egyptologist had ever set eyes on before: Rameses the Second, Thothmes the Third, Seti the First, eleven kings in all and nine queens. All, wrapped in sail cloth, were transported to Cairo.

That was one of the strangest adventures in Egyptian discovery; but in importance it was not greater than Maspero's opening of the pyramid of Unas at Sakkara about the same time. On the walls of this Fifth Dynasty chamber were found inscriptions of texts, rites, and incantations which were of inestimable

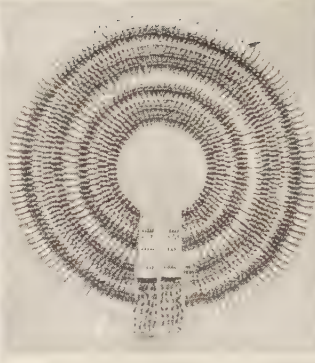
RELICS OF EARLY CIVILISATIONS



A TEMPLE OF ISIS IN EGYPT



THE GREAT STATUE OF RAMESES THE SECOND NEAR BEDRASHEIN



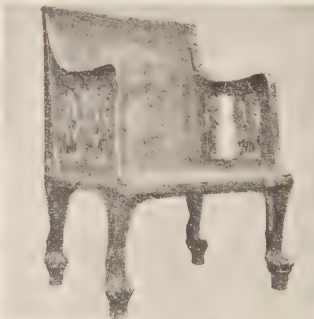
AN ANIMAL WHICH ADORNED THE KING'S COUCH, A COLLARETTE, AND A HEAD FROM THE CORONATION CHAIR, FOUND IN TUTANKHAMEN'S TOMB



A SCENE IN ANCIENT EGYPT—THE MASTER OF CEREMONIES SUPERINTENDING THE WRAPPING OF A ROYAL MUMMY



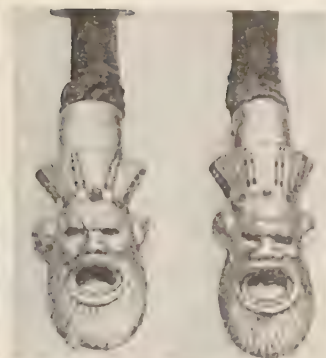
A PANEL OF TUTANKHAMEN'S CORONATION THRONE



THE CHAIR OF QUEEN TIYE



THE UPPER FRONT PANEL OF ONE OF TUTANKHAMEN'S CHARIOTS



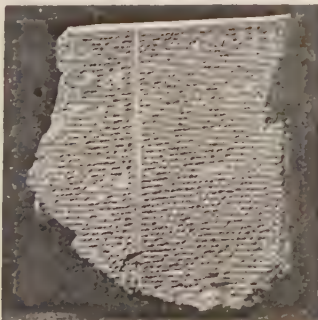
THE CORONATION THRONE, A WOODEN EFFIGY OF THE KING, AND PARTS OF THE HARNESS OF A ROYAL CHARIOT, FROM TUTANKHAMEN'S TOMB



A SCENE IN ANCIENT EGYPT—REMOVING THE ROYAL MUMMY FROM THE PALACE TO THE TOMB



A SILVER BRACELET OF QUEEN TAUSERET OF EGYPT



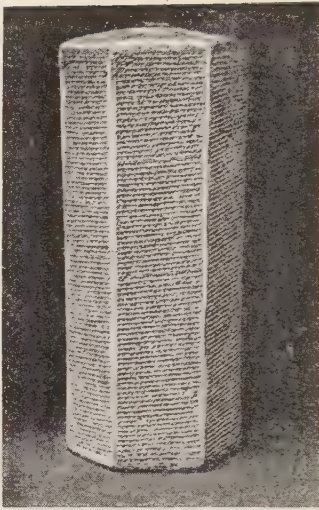
THE DELUGE TABLET, FROM NINEVEH



A COPPER LION DISCOVERED AT UR



THE MUMMY OF THENT-
MUTES-KEBTI



A CYLINDER OF SENNACHERIB,
KING OF ASSYRIA



THE MUMMY OF AN
EGYPTIAN PRINCESS



THE GENEALOGICAL TREE OF RAMESES AT KARNAK



SPIRAL STEPS LEADING TO A WELL IN A
HOUSE AT TEL-EL-AMARNA



AN INLAID GOLD PECTORAL OF A KING OF EGYPT
OF THE TWELFTH DYNASTY



A WOODEN FIGURE FROM AN EGYPTIAN TOMB



A WALL PAINTING FROM THEBES



A LION-HEADED FIGURE FROM THE TEMPLE OF MUT AT KARNAK



A PORTION OF THE WONDERFUL BRONZE GATES AT BALAWAT



RUINED WALLS OF OLD BABYLON



THE ENTRANCE TO THE SERAPEUM AT MEMPHIS

The pictures on these pages of objects from Tutankhamen's tomb are from The Times World Copyright Photographs by Mr. Harry Burton; other pictures are reproduced by courtesy of the E.N.A., Dr Hall, and others



GOLD VANITY CASE AND ITS CONTENTS FROM UR



ONE OF THE MANY BEAUTIFUL NECKLACES FOUND DURING THE EXCAVATIONS AT UR



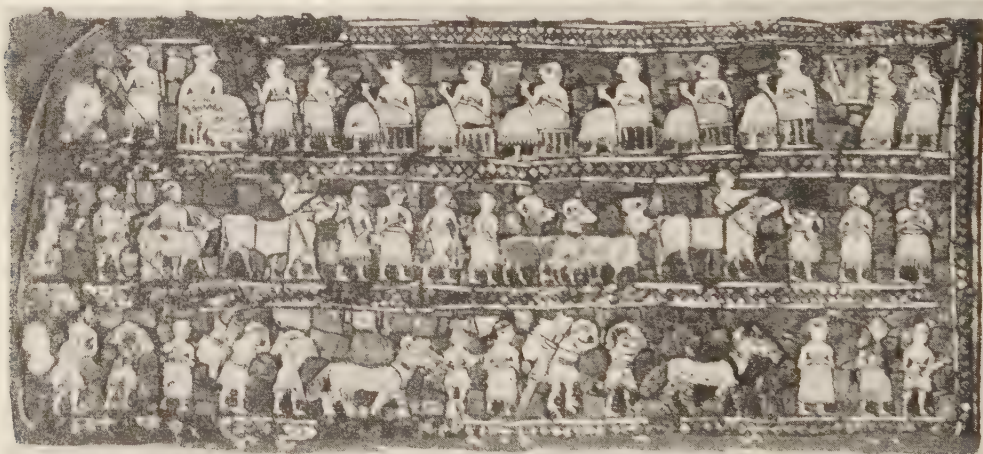
A TOILET-BOX OF STONE FROM UR



THE GOLD WIG OF A PRINCE FROM UR



A HAND ON A SILVER PIN FOUND AT UR



A MOSAIC PLAQUE SHOWING THE ROYAL FAMILY AT A FEAST, DISCOVERED AT UR



DAGGERS MADE OF SILVER, GOLD, AND COPPER FROM UR



A LAMP IN THE FORM OF A DUCK DISCOVERED AT UR



A DAIRY FARM FOUND ON A FRIEZE NEAR UR



AN ADZE MADE OF GOLD FOUND AT UR

Photographs taken for the British Museum and Pennsylvania University Museum by the staff of Sir Leonard Woolley

value for the study of the Egyptian language and of the early religious ideas of the priesthood.

Although today, and indeed for over half a century, the Cairo Museum has reserved the right to keep in Egypt anything that is found there, other countries, Great Britain, the United States, and Switzerland, have been allowed to excavate; and the work of the English Egypt Exploration Fund and Society, begun in 1883, is a witness to the value to knowledge of this permission.

THE ANCIENT GREEK CITY FOUND IN THE DESERT OF EGYPT

The efforts of the various nations have produced an extraordinary amount of knowledge as well as of wonderful objects.

The discoveries include the finding by Professor Petrie of the sites of Tanis and the early Greek city of Naukratis in 1884-85, to which the clue was given by an Arab who offered Petrie part of an alabaster statuette which the professor recognised as Greek work. The Arab said where he had found it, and Petrie, after a journey of twenty miles from the railway into the desert, found many mounds scattered with Greek pottery. When next year he came back to excavate, almost the first stones he turned over were part of a tablet with a proclamation of the city of Naukratis, a place so long lost that its existence was doubted. The discovery by Petrie at Hawara of the sarcophagus containing the mummy of the noble Horuta, wrapped in a network of beryl, lapis lazuli, and silver, with its amulets and ring, and birds of gold, is a romance in itself, but a romance of immense labour and determination, for the sarcophagus was in a flooded chamber at the bottom of a shaft forty feet deep.

HOW THE KING OF BABYLON SENT LETTERS TO THE KING OF EGYPT

But far more important as revealing the forgotten past were the discoveries at Tel-el-Amarna, which began in 1886 with the clay tablets on which were inscribed letters sent by the king of Babylon to the king of Egypt. They were accidentally picked out by an Arab woman who was searching for trifles to sell to tourists. In them is mentioned a present of some couches which may be the very objects afterwards found in Tutankhamen's tomb. Found at Tel-el-Amarna in the ensuing years of excavation were the relics and

tablets of Akhnaton, who was called the Heretic King because he renounced the old gods of Thebes and commanded men to worship one god, the Sun.

From Tel-el-Amarna the Germans carried off to Berlin the contents of the tomb of the sculptor Thuthmose, and with them the lovely head of Nefertiti, of which everyone can now buy a copy, and some heads of her husband King Akhenaton. After a brief reign of faithful failure Akhenaton was succeeded by Tutankhamen, who after an equally brief reign had his name erased from the official list of Egyptian kings. But time brought for him its revenges, for the sensational discovery of his tomb by Howard Carter and Lord Carnavon carried his name all over the world. Its wealth of gold and jewels made it one of the largest and richest collections that ever had been found.

THE PRICELESS COFFIN IN THE TOMB OF TUTANKHAMEN

Some of the treasures are of exquisite workmanship and beauty; some not so fine. But the coffin in which the mummy of the king was found ranks as the strangest. The outer stone coffin, the sarcophagus, was enclosed in four shrines, and in the sarcophagus were three coffins, the outer two in wood plated with gold, the innermost of solid gold. As bullion it is worth many thousands of pounds, as a work of art it is beyond price. The diadem of the king is also a supreme example of the goldsmith's art. But these illustrious gems of ancient culture were surrounded by many miscellaneous objects, why and how heaped together is a mystery.

There are magnificent examples of funerary furniture heavily gilded and carved in low relief with gods and beasts; boxes of wood inlaid with precious stones; drinking cups of glass and finely cut faience, and even silver trumpets which can be and have on ceremonial occasions been blown. Some of the innumerable other things are, it must be confessed, not of the highest taste or ornament, but they may not have been so considered by those who heaped them here in rude plenty. It is rather saddening to contemplate that this is all the glory left to the king, yet his name will not be forgotten.

Between these discoveries came that by E. H. Naville in 1887-89 of the site of Bubastis, a place known to Herodotus and rich in statuettes; and Petrie's excava-

tions in the Fayoum which at last showed where the fabled Labyrinth of Herodotus and Lake Moeris must have been. Many remarkable Greco-Roman mummy portraits were found here and the first great collection of papyri in Greek and Roman characters. De Morgan found the treasures of the Pyramids of Dahshur, a mass of pectorals, rings, bracelets, necklaces, chains, pendants, and diadems that belonged to the wives of three of the pharaohs of the Twelfth Dynasty. One of these that belonged to the wife of Senusert the Third is marvellous in its taste and dexterity of workmanship, a miracle of gold threads and jewelled flowers so fine that it could never have been worn, but must have been made to lie on a tomb.

Then came the tombs of the kings of the early Dynasties at Abydos, which Amélineau first opened, to be followed by Petrie and Naville in later years. To Petrie in 1896 fell the discovery of the inscriptions of the King Menephtah which referred to Israel. Then followed discoveries which put back the Egyptian clock thousands of years to the race that possessed Egypt before the Dynastic kings. The relics of this pre-dynastic people were first found by Petrie at Nakadah in 1895-96. They were a race which buried their people crouching in graves surrounded by black-topped ware and hand-made pottery going back to the Stone Age. This opened up a new vista of the origins of Egypt quite distinct from those who cut in the rock the tombs of the kings near Thebes. Later came Petrie's discoveries at Badaria in 1924 of the oldest civilisation known,

11,000 B.C. The Badarians were the very first agriculturalists to settle in Egypt. Their implements were flint and polished stone; their garments, tanned hides; and their metalwork, copper. Another triumph was Mr. Firth's identification near the Step Pyramid of Sakkara of the oldest stone building in the world.

Other excavations were those of the tomb of Osiris at Abydos, which Naville found, and those due to the same archaeologist at the Temple of Der-el-Bahari where the diggers almost stumbled on the hidden chamber where stood the Goddess Hathor in the shape of a cow, one of the most beautiful and impressive pieces of sculpture of the ancient world.

Among more recent discoveries are the treasures found at Kawa with the shrine of Tirhakah, the king of Ethiopia who reigned over Egypt in the days of Hezekiah, and who warned him as we may read in the Bible against Sennacherib, the king of the Assyrians—the "wolf that came down on the fold." The shrine of Tirhakah now stands in the Ashmolean Museum at Oxford.

We conclude this necessarily very brief account of Egyptian discovery with a note on Egypt's well-known monument, the Sphinx. This great block of rock near Cairo was carved into the likeness of the Sphinx in the time of Chephren of the Fourth Dynasty nearly 5000 years ago. The sand which long obscured its riddle has been cleared away—to reveal that this great god, for it was not a goddess, had feet of clay, for the great paws are partly made up of brickwork.

WHAT HAS BEEN FOUND IN IRAQ

As in Egypt so in Iraq (formerly known as Mesopotamia) the history of its peoples remained a sealed book till the nineteenth century. The tradition of the site of Nineveh near Mosul and Babylon near Baghdad remained, and many travellers, including Niebuhr, had gazed on the heaps that covered them. The first to survey them carefully was C. J. Rich, who lived as the agent of the East India Company in Baghdad, where he died aged 33 in 1820. Rich prepared the field for later explorers by careful statement of the gigantic remains of the lost cities and civilisations of the Assyrians, Babylonians, and their predecessors. Niebuhr had surveyed

Persepolis in 1765; but it was not till (as in Egypt) a military expedition was in the country that exact knowledge of the sites was placed before the world. General Chesney's mission in 1835 was peaceful, but it carefully surveyed the courses of the Tigris and the Euphrates, and all later explorers used Chesney's maps. The surveys of Assyria by J. F. Jones and of the site of Babylon under Selby which were made later were also of great value and interest to archaeologists.

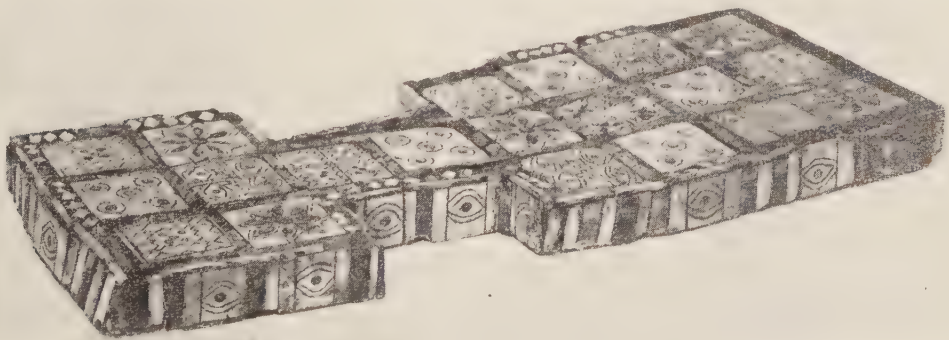
Excavation had not yet begun, but the extensive rubbish heaps of the ruins yielded clay tablets and bricks inscribed with unknown characters. There seemed

something like a parallel between these characters and the threefold characters of the Rosetta Stone of Egypt, but they presented a far more difficult problem than faced the interpreters of the Egyptian hieroglyphics. The three Babylonian writings were made out to be Old Persian with perhaps 40 symbols or letters; a more difficult writing which should be that of the early Mesopotamians, the Susians, or Elamites; and a still more elaborate writing distinguished as Babylonian. All the help for deciphering them in 1802 lay in the fact that the three writings were often found side by side.

In that year Grotefend, by picking out three royal names in the simplest of these forms of writing, took the first step, and he ascertained about one-third of the old Persian letters. But his essay on the

Others were now following: Dr. Hincks, an Irish clergyman of immense scholarship, who stands first as the examiner of the second and third script characters, Oppert, De Saulcy, and Talbot. So strange seemed the reading of these ancient characters, that there were doubters. These were silenced when, in 1857, a newly found clay cylinder inscribed with the characters was brought home from Mesopotamia and submitted to Rawlinson, Hincks, Talbot, and Oppert for independent translation. When their translations were unsealed they all gave the same version.

Only one step more in the unravelling of the dead languages need be recorded here. Hincks saw that these cuneiform writings of Babylon had come from some other source. So it seemed that this early Babylonian civilisation had been borrowed



INLAID DRAUGHTBOARD OF 3500 B.C., FROM UR OF THE CHALDEES

subject was not published till ninety years later, when others had had all the credit as well as the work to do over again.

In those years much progress was made by De Sacy in reading the Old Persian; and then in 1835 came Sir Henry Rawlinson, who was aided by a knowledge of the ancient tongue of Zend, just as Champollion had known Coptic. Rawlinson, like Chesney, a soldier, was in Persia on diplomatic duty, and he had the true intelligent curiosity of the man of science. He found the key to the cuneiform inscriptions on the Rock of Behistun in 1846 through fitting together two inscriptions in different scripts, identifying the names of Hystaspes, Darius, and Xerxes, and thence deducing the alphabets of Old Persian. He first got 14 letters, and the deciphering of this, the simplest cuneiform, was a matter of time. A picture of him copying the inscription is on page 6272.

from another, the people of Sumer, or Akkad. The second group of cuneiform characters is now recognised as a late form of the old language of Susa or Elam. But whether the oldest language is that of the Sumerians or Semites is not known.

Naturally a tide of excavation followed in Mesopotamia the deciphering of the inscriptions, though it had begun with Paul Botta, the French Consul at Mosul, who in 1842 had turned an inquiring eye on the great mounds of Kouyunjik and Khorsabad. At Kouyunjik, the reputed site of Nineveh, he had no fortune, but one day a good-natured Arab looking inquisitively at Botta's men at work asked what they sought, and, being shown a brick with the cuneiform characters on it, remarked laughingly that there were thousands of them at his village of Khorsabad. Botta was doubtful, but he sent workmen to sink a shaft there.

They had not gone far before they came on a wall.

Botta hastened to the spot and digging was resumed furiously; and as the upshot of these labours they unearthed a crumbling building with slabs on which were sculptured fighting men. There were the ruins of the great palace of Sargon which crumbled as it was disclosed, for it had been destroyed long ages ago by fire.

LAYARD'S AMAZING ADVENTURES ON HIS JOURNEY TO THE EAST

Among the friends of Botta was a young Englishman, Austen Henry Layard, whose mind wandered from the study of the law to the fabled East.

After his father's death, Layard was asked by his uncle, a coffee planter in Ceylon, to join him there, and the young man jumped at the chance, but resolved on seeing as much as he could of the East by travelling overland. While he was still on the east of the Jordan the Bedouins captured him and he was a slave for six months. He escaped, and at last reached Damascus in rags and half-starving. The British Consul sent him on with a little money and some clothes, and he tramped his way to Constantinople.

Layard eventually reached Mosul, near Khorsabad, where Botta was excavating the Palace of Sargon. Layard sent to London an account, with drawings, of the discoveries, and asked for funds to make excavations of his own. James Fergusson, the writer on architecture, and John Murray, the publisher, talked them over, and were the first to start a small private subscription which brought old Assyria to light.

THE UNEXAMPLED TREASURES FOUND BY LAYARD ON THE SITE OF NINEVEH

Provided thus with funds, Layard set out on the dangerous road to Mosul again, and in a fortnight had set diggers to work at the mounds of Kouyunjik that had been given up by Botta as a bad job. Here Layard found the unexampled treasures which are now in the Assyrian halls of the British Museum—remains of the palaces built by Shalmaneser the Second and Garhaddin Ashurnasirpal the Second; the huge winged bulls which guarded the gateway; the sculptured lions of the Throne Rooms; the black obelisk of Shalmaneser. Layard went on yet another expedition, and searching anew Botta's

site of Kouyunjik, found the Palace of Sennacherib.

His work was followed up by one of his native companions, Hormuzd Rassam, a cultured and able man who found the palace of Ashurbanipal, more familiar perhaps under the Greek name of Sardanapalus, with sculptures and the library. Years later he found the bronze gates of Balawat and partially disclosed the site of Sippar.

Layard had meanwhile transferred his attention to Babylonia. There was nothing quite so immediately startling here as at Nineveh; but knowledge of language and religion was piled up, and apart from the excavation of the temple of the Moon God at Ur of the Chaldees, the most striking thing for a number of years was Rawlinson's examination of the tower temple of Nebuchadnezzar.

De Sarzec excavated the mound of Telloh, where the Babylonian city of Lagash had been. There had been kings in Lagash before Babylon. De Sarzec found the sculptures and relics of Gudea and the mighty ones who had ruled in Sumer. His work pushed back farther the beginnings of the history of the world of cities, of rulers, of laws, of civilisation.

THE ANCIENT CIVILISATION DISCOVERED AT UR OF THE CHALDEES

The identification of the beginnings of civilisation, in fact, has shifted during this century from Egypt and the Nile Valley to Asia and the fertile plains of the Euphrates and the Tigris. Whereas it was believed in the nineteenth century that Egypt was the centre from which culture, or civilisation, had radiated over all lands, the excavations at Ur of the Chaldees, twelve miles from Baghdad, set up an imperious question mark. It referred the question back to the Sumerians, an ancient gifted people, or to the unknown hill country from which these immigrants descended into the great Mesopotamian plain. They were town-makers and town-dwellers who proceeded to civilise the shepherds and farmers they found there and survived the disastrous flood arising probably from insufficient drainage as the rivers overflowed, and mentioned in the Babylonian records and in the Book of Genesis. The Sumerians were not the only town-makers of their age, but they left an indelible mark of their work centuries later at Ur of the Chaldees, from which

Abraham led his flocks to the Promised Land of Palestine.

The earliest royal cemetery discovered at Ur is at least as old as the First Dynasty of Egypt, whose civilisation was less advanced, for the Sumerians had invented not only the potter's wheel but were experts in metals. As confirmation of their antiquity was the finding at Kish of the inscriptions of A-An-Hi-Pad-Da, King of Ur about 3100 B.C.

The excavations in Ur of the Chaldees began in 1922 and were undertaken by the joint expedition of the British Museum and the University of Pennsylvania Museum, with a grant from the Carnegie Corporation. Dr. H. R. Hall had already excavated a royal palace at Kish and a temple at Tell-el-Obeid, both of the first dynasty of the kings of Ur, when Ur itself, the capital of King Ur-Engur of the Third Dynasty, was uncovered. The most remarkable building at Ur is the Temple of the Moon God Nannar, patron of the city. Sir Leonard Woolley succeeded Dr. Hall, and it is to him we owe most of our knowledge of the ancient Sumerians.

Two months after the digging had begun in the Royal Cemetery area at Ur

a gold dagger appeared as an indication of the treasures to come. This was followed by the discovery of a royal tomb, which had been robbed in antiquity; but afterwards in a nearby wide trench appeared bodies of men and women elaborately clothed and wearing headdresses of gold and lapis-lazuli. Then came a second tomb, which revealed the unaltered burial of a queen—complete with all her richest possessions. She was Queen Shubad. On her head was the regal crown, with wreaths of gold and flowers, with a comb of gold and heavy gold earrings. Beside her were a toilet box; a gaming board; her gold lyre; a harp with a golden bull's head; a mosaic standard; and a vast collection of golden vessels and ceremonial weapons of gold. A procession on the mosaic standard reveals much of the dress and ceremonies of the Court at Ur.

A catalogue of all that was found was completed by Sir Leonard Woolley in two magnificent volumes. They contain coloured reproductions of a kingly gold helmet, gold goblets and bowls; and, strangest of all, of a life-size ram caught in a thicket, a relic which passed into Jewish tradition centuries later.

THE LOST EMPIRE OF THE HITTITES

In north Syria the perseverance of nineteenth-century excavators and scholars resuscitated the lost empire of the Hittites and Amorites, who so troubled Jehoram. Uriah, the servant of David, was a Hittite. Hebrew merchants were the middlemen of the trade between the Hittites and the Egyptians, but the Egyptians had fought them before the time of Elijah, and the Hittites were a great people long before the days of the Exodus.

The first notice of this lost empire was due to Otter, in 1736, and nearly 80 years later, when the Rosetta stone of Egypt and the cuneiform inscriptions of Babylonia were being scrutinised, the writings on the famous Hamath stones, casts of which are in the British Museum, invited attention to an unknown script. Richard Burton had copied them. Dr. Wright, an Irish missionary at Damascus, sent the casts home and was the first to suggest that these were writings of the Hittites; and Professor Sayce was the first to attempt to decipher them.

Sayce has told us more of this lost

people than any other writer. Their sway stretched far over Asia Minor. The Hittite Empire was to the north, its northern capital at Boghaz-Keui (Khatti), where Dr. Winckler excavated in 1906, and its southern capital was Carchemish, the modern Jarabis.

At the mountain fortress of Boghaz-Keui thousands of tablets inscribed in script have been found, and revealed as Hittite political records. They frequently mention a people, identified with the Achaeans of Homer, who were Greek sea-going raiders who served the Hittite kings.

French excavations on the North Syrian coast have carried the tale farther, for at Ras Shamra was a Greek settlement in which Achaeans mingled with Semites, perhaps Phoenicians, and to which were brought things from Cyprus, Babylonia, and Crete. There was a library with tablets in eight languages and dictionaries for the use of scribes. It was the meeting-place of East and West. At Shamra also were found relics in gold and ivory of Mycenaean art.

The Hittite Empire was at its height just before Tutankhamen, and from tablets of Tel-el-Amarna we learn that the Hittites were then pressing southward and causing much apprehension in Egypt. The two Empires fought and the Hittites were not worsted. But the long wars of a century exhausted them and so prepared the way for the entry of the Israelites into the promised land of Canaan.

All these things are written in the book of knowledge which first Wright and then Sayce compiled from the references to the Hittites in Egyptian hieroglyphs, and to a lesser extent in Assyrian cuneiform writings, where the first clear account of the Hittites appears in the annals of Tiglath-Pileser the First, who besieged Carchemish. The Hittite Empire only went down before that of Sargon of Nineveh some seven centuries B.C.

In 1879 Professor Sayce went with an escort of Turkish soldiers to see two figures carved on a rock in the Pass of Karabel, near Smyrna, so ancient that Herodotus knew of them and said that Sesostris of Egypt had left them there. These warriors with bows and spears Sayce declared to be Hittite, and the inscription Hittite also. He had been led to this conclusion by an examination of those strange-looking hieroglyphics cut on a stone of black basalt and built into the corner of a house at Hamah. There were other stones as venerable. Dr. Wright persuaded the Turkish Governor to remove the stones under a guard of soldiers to Constantinople, and plaster casts were made of them.

The casts or photographs were seen by Dr. Hayes Ward, of New York, who perceived in them a resemblance to seal writings found in Nineveh by Layard, which were neither Assyrian nor Phœnician nor Egyptian. To Sayce it seemed most reasonable that they were the writing of the Hittites. His supposition was confirmed by the excavations at Carchemish.

The truth flashed on Sayce. The figures in the Pass at Karabel were not Egyptian, but Hittite. He spent three hours in the niche between the rocks, taking impressions of the writing, and with joy was able

to confirm his belief. The Sesostris of Herodotus turned out to be not the pharaoh who fought the Hittites, but a symbol of the far-reaching power of his opponents. Hittite art and Hittite writing, if not the name of Hittite, were proved to have been known from the banks of the Euphrates to the Aegean Sea.

Herodotus must have described the figures from hearsay, for he said they were three feet high. They are more than life size; and the one that has suffered least from usage and time stands high above the path marching toward Ephesus and the Maeander. Not far away another sculpture has been found, a strange figure of a woman carved on the cliffs of Siplyos near Magnesia, seated on a throne with a lotus-flower on her head and hair streaming down her shoulders. She is the goddess of Asia Minor, the great Cybele. Sayce found one word on the inscription meaning king. The artist who graved it on Mount Siplyos must have learned his art on the banks of the River Nile.

The Amazons were the priestesses of this goddess, whose religion spread from Carchemish with the Hittites. It was a powerful religion, and the priestesses, in places numbering thousands, were armed. Ephesus was dedicated to her, though when it passed into Greek hands the goddess became the Greek Artemis. Sculptures found at Boghaz-Keui depict her in a chariot drawn by lions. Near Boghaz-Keui is Euyuk, where are the remains of a vast palace of stone, its entrance flanked by monoliths of

granite carved with Sphinx-like figures and a double-headed eagle, the way being carved with bas-reliefs as in Assyria.

Carchemish was first identified as the site of the Hittite capital by W. Skene, the English consul at Aleppo; it was visited by George Smith, famous as the reader of the Assyrian Deluge tablet; and the site was bought by Mr. Henderson, a later Aleppo consul, for the price of a cow!

The Hittite Empire subsidised the Greek colonies; moreover, the sculptured lions at Mycenae, at the Lion Gate behind which Schliemann excavated, were inspired by Hittite art.



A HITTITE GOD AT CARCHEMISH

The Story of the Peoples of All Nations and Their Homelands



The minarets that rise above Cairo

EGYPT AND ITS LONG, LONG STORY

FOR over ten thousand years men have lived and thrived on the banks of the River Nile.

In spring and early summer the mountains of Abyssinia and Central Africa send down their waters to flood and make fertile the narrow valley and the delta of the Nile. Egypt, as this enriched area is called, is therefore a long oasis through the desert belt which crosses the world from Morocco to China. It has been felt to be a favoured land almost as far back as human records go. Long before Britain had even a name Egypt was rich and powerful, and the ruins of her ancient glory remain one of Earth's wonders.

Egypt is today a rich land, with abundant, oft-recurring harvests. Yet the area of its productive part is very small, merely alongside the Nile. Though Egypt, including its outlying deserts, occupies 386,000 square miles, the Nile valley and delta, where the Nile broadens out through canals towards the sea, is only 13,574 square miles, about twice the size of Wales. Yet there is a population of about nineteen million people. The country is, therefore, very thickly and very thinly peopled in different parts.

Its great ancient cities are populous. Cairo, the capital, has over 2,000,000

inhabitants; Alexandria (once the most learned city in the world) has over 900,000; and Port Said, at the northern entrance to the Suez Canal, has over 175,000; Tanta and Mansura come next.

The products of Egypt are mainly agricultural (cotton, sugar, rice, tobacco, maize, wheat, barley, and millet), and so helpful is the climate that it allows three crops yearly. The area farmed by each worker is small, for out of 19 million people there are about 2,600,000 landowners.

The crops are almost entirely dependent on irrigation schemes based upon the River Nile which flows for 960 miles through Egypt without receiving any tributaries. The Nile now irrigates over five million acres, its flow being held up by huge dams such as that of the Gebel Aulia reservoir which is over 5,400 yards long and holds up 2000 million cubic metres of water. The famous Aswan reservoir can hold over twice that quantity.

Cotton is the backbone of Egypt's industrial wealth; petroleum and phosphates are her chief mineral products.

The life of the ordinary people remains, in spite of modern inventions and the spread of education, much the same as it was in the distant past, and may be imagined from many of the features in

THE FIVE CONTINENTS & 100 NATIONS & RACES THAT INHABIT THEM

the history of this ancient land that must now be recalled.

When we glance at Egypt as it is today we are reminded at every turn of a great and wonderful past. Its true glory lies in distant times. Grand and immense buildings, such as those we see by the banks of the Nile, exist only as the result of the movement of material—hard and laborious work, indeed—by thousands of human beings. We must realise that a pyramid is solid, except for the passages and the funeral chambers to which they lead.

THE PYRAMID SET UP IN THE SANDS BY A HUNDRED THOUSAND SLAVES

The base of the Great Pyramid is almost exactly the same size and shape as Lincoln's Inn Fields. What a scene must have been the building of such a mass, with such a base and such a height!

The huge granite facing-stones of the pyramid had to be quarried in the neighbourhood of Aswan, and brought down the river for hundreds of miles, and then, with enormous toil, men had to drag, push, and roll them over the burning sands.

Let us think of the stupendous work of getting it all into place. It is said that a hundred thousand slaves took part in this huge piece of work.

We may well wonder what was the object of building the Pyramids at such immense cost and labour. As far as we know it was solely for the honour and glory of the king, and to provide a secure resting-place for his body after death. For one of the chief points in the religion of the old Egyptians—that wonderful religion which changed so little during its long history—was to arrange so far as means would allow for preserving the body, as long as possible, whole and entire. This they did by making mummies of the bodies and putting them in decorated coffins hidden away in great rock tombs, and in the Pyramids, where it was hoped that no one would ever be able to find or disturb them.

THE TREASURES OF THE TOMBS THAT TEMPTED THE ROBBERS

Alas, for the last 3000 years at least, robbers have broken into the tombs from time to time, attracted not by the mummies but by the treasure that was buried with them. For the Egyptians believed that, in some mysterious way, in the new

life to which he had gone, the departed person would need the things he had owned in his earthly life. So, with the mummies of royal and rich people were put their valuable ornaments and their possessions, besides furniture, clothes, and food for the use of the spirit of the departed, and the quaint little figures that were supposed to do the work that would be required in the fields of the land of peace.

It is in the Valley of the Kings, among the limestone hills behind the plain of Thebes, that the most richly equipped tombs of the Pharaohs have been found.

It is the sight of these personal belongings that brings us into such close touch with the Egypt of 3000 or 4000 years ago. For we have in the British Museum cases full of such treasures as the dolls with clay beads for hair, and the toys and little worn shoes and sandals of the children; the dressing cabinet of the fine lady, containing ointments for the eyes, elbow-cushions, and dainty pink kid slippers. We have, too, the palette and paints of the scribe, the musical instruments of the musician—in short, hundreds of articles of everyday use that bring us face to face with the people to whom they belonged centuries ago.

THE SPLENDID AND GIGANTIC TEMPLES BUILT BY THE OLD EGYPTIANS

The attention of the whole world has been drawn in our time to the intense personal interest of the Egyptian tombs by the discovery of the tomb of King Tutankhamen of which we read elsewhere (see Index).

And, besides these interesting personal belongings and thousands of little figures, with nets and field implements painted on them, there were always put beside the mummy representations of the numberless gods to whom the Egyptians prayed, and to whom they erected wonderful temples, whose ruins still form one of the sights of Egypt. There is a great group of these temples on the Nile, where the magnificent city of Thebes once stood, far on the way to Aswan. The great halls, imposing gateways, and rows of pillars form a beautiful sight in brilliant sunshine and deep purple shadow, and, as we gaze at them, we fancy them once more in their first beauty, with long processions of chanting priests and priestesses, and gorgeous display of kingly magnificence when the king came to pay

his worship, amidst the stately monuments of gold and silver, adorned with ivory and precious stones.

If we look at the walls and columns of the temples, at the solid vaults, at the coffin-cases, at the sculptures and the wall-paintings, we shall find most of them covered with picture-writing. Until the nineteenth century no one could guess what it meant. In 1799 an engraved stone was found at Rosetta, near Alexandria, now at the British Museum, which has served as a sort of key to unlock the mystery. There is a picture of this stone on page 685.

This discovery also opened up to us the

how they expected to be judged, and how they believed they would live and work on their way through the underworld. Besides this and other religious books, there are many other papyri of great age, and they include fairy tales, war poems, medical and astronomical books, and lengthy instructions as to behaviour.

The first historical king of all Egypt is put by some in the thirty-fifth century before Christ. Some think that he, Menes, who is said to have turned the course of the Nile, lived much earlier. Before him there are legends of god-kings and heroes, and kings of small States. Specimens of very old pottery, with pictures on it of



A WOMAN OF KARNAK



A NATIVE DONKEY BOY



TWO EGYPTIAN GIRLS

old books and chapters of books constantly found in the tombs. These were in long rolls, or *papyri*, so called from the material on which they are written, the inner part of the papyrus reed growing on the Nile banks. We get our word paper from it.

The work of the scribes was to make copies of these papyri. The one most copied is called the Book of the Dead, parts of which are believed to be older than the pyramids themselves. Certain chapters of this book were always laid beside the mummies, to instruct them what to say and how to behave in the underworld. There is no end to the interest of the Book of the Dead, not only on account of its entrancing illustrations, but also for the teaching it gives about the religion of Egypt, how men tried to fit themselves in life for a happy hereafter;

soldiers and boats, very like children's drawings of today, give an idea of the first known life on the Nile long before Menes.

For the sake of convenience, in dealing with the great number of kings who followed Menes, we group them into thirty or more dynasties, or families, and the names are gleaned from the various lists of kings on tablets and papyrus, made from time to time through the centuries, which have come down to us. When looking at inscriptions we can always distinguish royal names because they are surrounded by an oval line supposed to be a cord tied in a knot to preserve the name from contact with common ones. This oval is called a *cartouche*.

Before the king's name will generally be found some Egyptian words composed of a sign like an umbrella and an insect

over two half-circles. These signs mean King of the North and South, for Egypt was long divided into two parts, and so we hear of the double crown, which is made up of the red crown of North Egypt and the white crown of South Egypt.

Each king also called himself Son of Ra, or the Sun, which is shown by a goose and a sun with a dot in the middle.

Very little is known of the kings of the first three dynasties. It was under the rule of the fourth that the three great pyramids near Cairo are believed to have been built by Khufu, by Khafra, and by Menkaura.

If we would see the speaking features of Khafra, and note how he sat to give audience to the overseers and officers of his great building works, we can find a cast of his wonderful lifelike portrait in the British Museum. There he sits on his throne, surrounded by memorials of the officials who superintended the building of the second pyramid.

Of Menkaura the museum possesses part of his skeleton and the fragments of his coffin, taken from the third pyramid, with the inscription saying he was just and merciful.

Not far from the Pyramids of Gizeh is an enormous monster, hewn out of the living rock, with a human head and the body of an animal, called the Sphinx, so large that it could scarcely be got into the drum below the dome of St. Paul's. Between the front paws is a little temple in which the Ancient Egyptians worshipped.

THE FAMILY FROM A FAR LAND WHICH CAME IN SEARCH OF FOOD

Many interesting tombs belong to this period, perhaps 2400 years before Christ. One of them has wall-paintings representing the arrival in the country of a family, such as that of Abraham, the great founder of the Jewish race. The story of his visit to Egypt in search of food, when there was a famine in his own country beyond the Isthmus of Suez, is familiar to us in the pages of the Bible. What a change it must have been to the patriarch, for many years used to a wandering tent life and the silence of wide spaces, to enter into the busy life of the Nile valley, with its great cities and huge buildings, and to see the luxury and splendour of the king's Court! It must have carried him back to his boyhood, to his native land, where there were also great cities and much

wealth, a country, as we read in another part of this book, as old as Egypt itself.

We can well imagine that Abraham would tell stories of this visit to Egypt to his son Isaac, who would tell them to his son Jacob, and Jacob to Joseph. We read the story of Joseph elsewhere; let us follow him again on his sad journey to slavery in Egypt, fitting in all we can to make real his daily life.

THE BASKETS IN THE BRITISH MUSEUM WHICH JOSEPH MAY HAVE SEEN

The baskets in the upper Egyptian rooms at the British Museum might well have been those which the chief baker carried on his head; the models of the granaries show how corn was stored, and bring to mind Joseph's great work in fighting the famine that lasted so long.

Fashions changed so little in Egypt for centuries that we can well borrow those seats and other furniture and paintings in the cases around to put in the palace of the king to whom Joseph became as a son, and we may fancy them together discussing earnestly affairs of state—the king on his throne, in a black wig of little curls and plaits, like the one found in a reed box; and Joseph with his reed pens and paints, reading his report from a papyrus roll.

Little is known of the history of Egypt at this time, for the kings who ruled then destroyed monuments rather than set them up. But when these Shepherd Kings passed away many famous names of builders and soldiers rose up during the years Israel lived in bondage. Among them was Thothmes III, who inscribed and set up the great obelisk we call Cleopatra's Needle, though the famous queen lived several centuries after it was built. This pillar now stands on the Thames Embankment.

A GREAT QUEEN AND A KING WHO PERSECUTED THE ISRAELITES

Then there was the great Queen Hatshepsut, often called the Elizabeth of Egyptian history. She sent most interesting expeditions to discover unknown countries, and had an account of them, with fine illustrations, engraved on the walls of a magnificent temple she built near Thebes. Rameses II is believed to have been the great oppressor of the Israelites, and we can see his face in the huge stone monuments he set up. More wonderful still is his mummy, which has

been found, together with the mummies of many of his race, and put into the museum in Cairo. Thus, the features upon which so many looked with awe, perhaps the little Moses among them, are shown again to the world more than 3000 years after the great king's death.

PICTURES OF LIFE IN EGYPT IN THE DAYS WHEN MOSES MET PHARAOH

Magnificent were the temples and monuments set up by the Pharaohs in this era, among which we find the massive ruins at Karnak and Luxor, near Thebes. Bricks such as the Israelites made for use in building store cities for their hard taskmasters, necklaces and jewellery such as they may have taken when they "spoiled the Egyptians," are here in the museum before our eyes. As we again think over the romantic story of Moses, we find endless objects with which to frame his life from childhood onwards.

The wall-paintings from the tombs show in their bright colours how the Egyptians amused themselves in the time of Moses, and before and after. There are the gay parties with music and dancing; a father getting birds with a sort of boomerang, the child holding on to his leg for fear of falling out of the boat; the mother gathering lotus flowers; the family cat retrieving the birds three at a time. And when the time came for lessons those reed pens and red and black paints were the sort with which the boy must have learned to write. The Ten Commandments, brought down from Sinai by Moses after he had left Egypt, are all shadowed in the forty-two commandments of the Book of the Dead.

THE SUFFERING OF EGYPT AT THE HANDS OF THE ASSYRIANS AND PERSIANS

For about a thousand years after this brilliant line of the Rameses dynasty, the history of Egypt, on the whole, was one of gradual decline and gathering trouble. It was during this time that the priests of the splendid temples became richer and richer and even more powerful, till at last they made themselves kings. When examining the mummies and their cases, we notice how many belong to priests and priestesses, doorkeepers, incense-bearers, and other officers of the great religious colleges.

Dynasties of foreigners followed the priest-kings, and the country was breaking up and everything going down, when

the kings of Assyria saw their chance, and began to attack Egypt on her own frontier. They overran the whole of the country, spoiling the harvests, so that the people starved, and the fine temples and monuments began to fall into decay. Egypt revived for a little while, only to be again devastated from end to end by the Assyrians, till Assyria, too, fell under the great power of the Persians.

The Egyptians took every opportunity to revolt against the Persians. Between the second and third revolts, in the fifth century before Christ, a traveller came to Egypt, notebook in hand, for he was an author, anxious to collect material for his History of the Persian Wars. This was the Greek Herodotus, the Father of History, who set down in a pleasant, chatty way his impressions of the wonderful country, of the Nile in flood, of the pyramids, and other great buildings.

THE GREEK SOLDIER WHO FOUNDED THE GREAT CITY OF ALEXANDRIA

The Persians, in their turn, were driven out by Alexander the Great, of Greece. His stay was but short in Egypt; but his passage has left marks for all time. He flashed across the desert to worship at the shrine of the god Jupiter Ammon, whom he claimed as an ancestor, and he planned and founded the great city of Alexandria, called after him, which, under his successors, became one of the most important cities in the world.

Three centuries before Alexander, an Egyptian king had employed Greek soldiers and allowed Greek traders to settle in the delta. Before this Egypt had been closed to foreigners; but these Greeks found their way into the country, and, little by little, their cleverness in trade, their wonderful power in art and in learning spread Greek influence ever farther along the Nile. Naukratis became a famous Greek city during this time, and today explorers find much Greek treasure of all kinds buried in various parts of the Nile delta.

The kings succeeding Alexander were the Ptolemies, the first of the name being one of Alexander's generals. They were great builders and restorers, and to them we owe the temple of Edfu. The Ptolemies also favoured the city of Alexandria, and started in it the immense library, afterwards unhappily burned, also the university to which were attracted some of the most famous Greek scholars.

Another Ptolemy built the tall lighthouse, said to be three times as high as the Monument in London, and, like the Pyramids, one of the wonders of the ancient world. The flare from its top guided the shipping of Alexandria safely into its double harbour for long years, but not a trace of it now remains. The same Ptolemy caused the Old Testament, originally written in the Hebrew language, and understood only by comparatively few people, to be translated at Alexandria into Greek, the beautiful language which was soon to be carried over the known world. Another good work of this same king was to cause an Egyptian scribe named Manetho, who knew Greek well, to write in that language a history of Egypt and its religion, and though his actual records have been lost, other writers have copied from Manetho, and thus his work has been of very great use.

THE SHADOW WHICH CREPT EASTWARD AND REACHED EGYPT

It was in the reign of Ptolemy that the Rosetta Stone was set up. We see now how it was that a Greek translation came to be put below Egyptian writing. Both languages were then in use in Egypt. And all the time that Egypt was becoming more and more Greek "a shadow ever lengthening towards the East" was slowly creeping outwards from Rome; it passed over Greece itself in the middle of the second century before Christ, reaching Egypt about a hundred years later.

The last of the Ptolemies was Cleopatra, whose story is told in one of Shakespeare's great plays. What a perspective of years it is from Menes to Cleopatra, some forty centuries full of work and struggle and every kind of human interest.

Egypt remained under the Eastern or Greek Empire after the great division into East and West. It accepted Christianity with the rest of the Empire, but quickly fell under the yoke of the Mohammedans when they set out to conquer the world, and throughout the ages that followed little was heard of the Egyptian people themselves. They were the bearers of the yoke of alien masters, such as the Circassian Mamelukes, who held power mostly under Turkey, until the time of Mohammed Ali, who established the reigning dynasty, though his country continued to pay tribute to Turkey.

His successors, however, plunged Egypt

into debt with Europe, moreover, even after the opening in 1869 of the Suez Canal, which gave great strategic importance to the country and was so valuable to international commerce, Egypt was so burdened with debt, misgoverned, and oppressed, that the European powers decided to intervene.

HOW EGYPT CAME UNDER THE PROTECTION OF BRITAIN

It was only the British, however, who did so, overwhelming the insurgent leader named Arabi Pasha at Tel-el-Kebir in 1882, and helping the Egyptian army to hold back the Mahdi, who had overrun the Sudan. Later, Lord Kitchener defeated the Khalifa, who had succeeded the Mahdi, and recaptured Khartoum, the capital of the Sudan.

British Civil Servants and officers, under the fine supervision of Earl Cromer, had brought Egypt from poverty to wealth, from dependence on the weather to a surer water supply, from weed-matted rivers to open waters frequented by regular steamers. British engineers built railways and erected huge dams and reservoirs for the irrigation of more and more land for the peasants. An efficient form of government was created and Egyptians were brought into the administration.

Turkey lost her last vestige of authority in Egypt when she made war on the British in 1914. Egypt then became officially a British Protectorate. The continuance of this, however, came to be resented by a strong nationalist party, so in 1922 the British recognised Egypt as an independent monarchy except for their right to maintain forces in Egypt to protect the Suez Canal.

THE DECLINE OF BRITAIN'S INFLUENCE AND HER WITHDRAWAL FROM EGYPT

This right too was surrendered in 1936 under a Treaty of Alliance which was faithfully observed by Egypt during the Second World War, when the country was an important base for the struggle in North Africa and the Middle East.

After that war the Egyptians joined the United Nations and the British began to withdraw their troops and endeavoured to come to an agreement over the joint rule of the Sudan. Meanwhile, Egypt had taken a leading part in the formation of the Arab League.

PEOPLE AND TOWNS OF EGYPT



THREE SYMBOLS OF OLD EGYPT—CAMEL, PYRAMID, AND SPHINX



A HAPPY MOTHER AND
HER CHILD



AN OLD
WATER-SELLER



A NUBIAN FRUIT-SELLER
OF CAIRO



THE PALACE HOTEL, A SPLENDID BUILDING IN HELIOPOLIS, A SUBURB OF CAIRO



A STREET IN PORT SAID



A STREET IN ISMAILIA



THE SEA FRONT, A STREET SCENE, AND THE HARBOUR AT ALEXANDRIA



THE TOWN OF ASSIOUT



A VIEW OF SUEZ



CAIRO, THE CAPITAL OF EGYPT—THE CITADEL WITH ITS GREAT MOSQUE



A BUSY STREET IN THE
NATIVE QUARTER



MOSQUES IN THE STREET OF
THE WEZIR GATE



THE MOSQUE AND STREET
OF EL BENAT

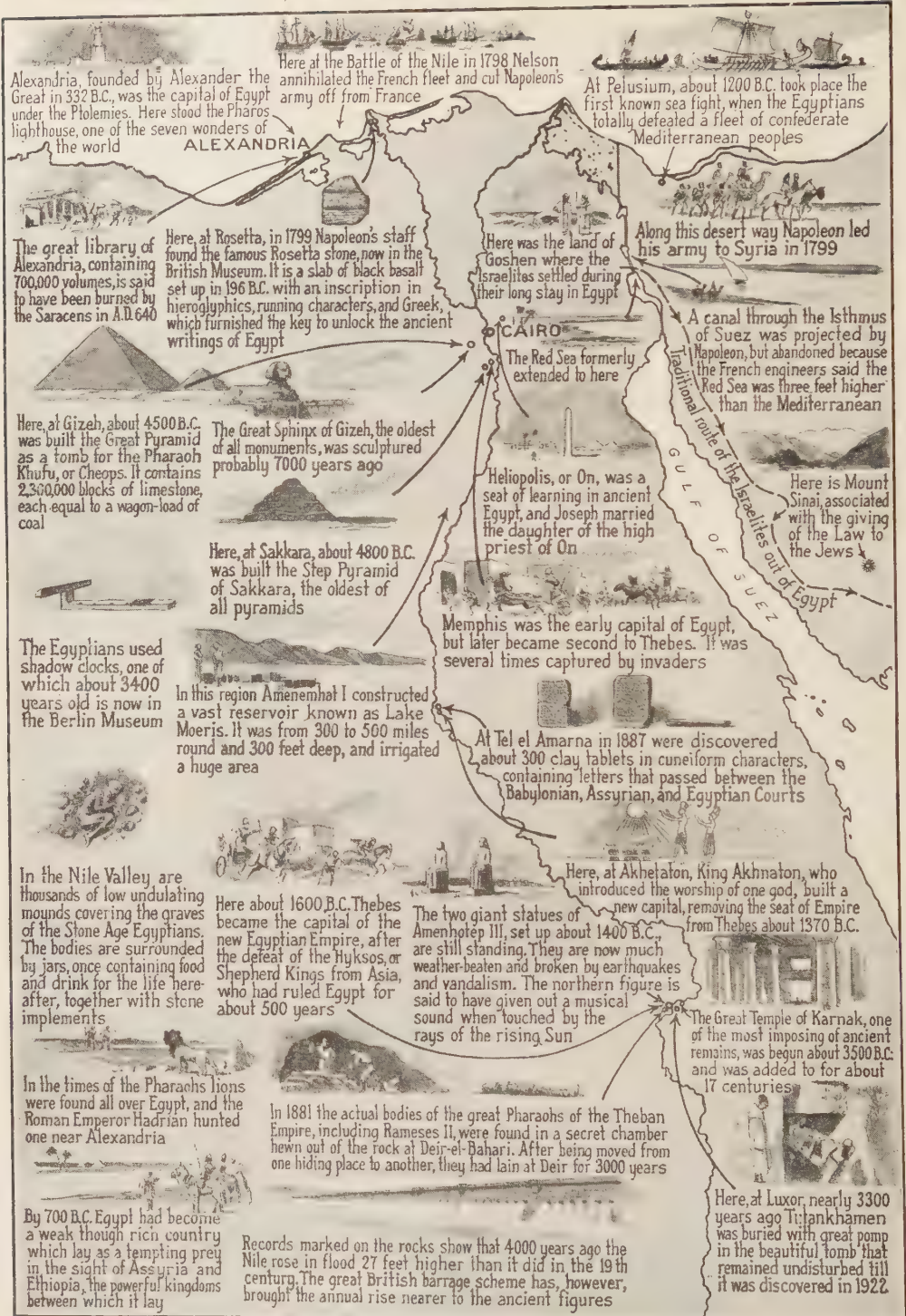


A EUROPEAN STREET
IN CAIRO



THE NILOMETER ON THE ISLAND
OF RODA NEAR CAIRO

THE OLD, OLD STORY OF EGYPT



THIS PICTURE-MAP SHOWS SOME OF THE CHIEF EVENTS IN THE HISTORY OF EGYPT AND MANY OF THE ANCIENT MONUMENTS WHICH HAVE STOOD FOR THOUSANDS OF YEARS

See Main Index for other pictures of Egypt's ancient monuments

One Thousand Poems of All Times and All Countries

The Most Famous Poem of Macaulay

LORD MACAULAY, the brilliant historian, was also famous in his day as a poet, and though his poems are not now in the fashion, we ought to be large-minded enough to admire their vigour and fire. He lived in his mind in days historical. Old happenings were real to him. Even the legendary days of old Rome, before regular history was written, were as alive to him as the days he lived in. We see it in this poetical account of a famous incident in traditional Roman times, soon after the Republic was formed. It does not matter a bit to us who were the people he introduces into the poem. The scene is stirring and romantic, and the story is finely told. The poet has the power of making mere names of men and places sound heroic and noble, and the spirit of patriotism shown throughout, and especially towards the close of the Lay, is thrilling. The poem is not quite complete here.

HOW HORATIUS KEPT THE BRIDGE

LARS PORSENA of Clusium
By the Nine Gods he swore
That the great house of Tarquin
Should suffer wrong no more.
By the Nine Gods he swore it,
And named a trysting day,
And bade his messengers ride forth,
East and west and south and north,
To summon his array.

AND now hath every city
Sent up her tale of men;
The foot are fourscore thousand,
The horse are thousands ten:
Before the gates of Sutrium
Is met the great array.
A proud man was Lars Porsena
Upon the trysting day.

BUT by the yellow Tiber
Was tumult and affright:
From all the spacious champaign
To Rome men took their flight.
A mile around the city,
The throng stopped up the ways;
A fearful sight it was to see
Through two long nights and days.

TO eastward and to westward
Have spread the Tuscan bands;
Nor house, nor fence, nor dovecote
In Crustumerium stands.
Verbenna down to Ostia
Hath wasted all the plain;
Astur hath stormed Janiculum,
And the stout guards are slain.

IWIS, in all the Senate,
There was no heart so bold
But sore it ached and fast it beat
When that ill news was told.

Forthwith up rose the Consul,
Up rose the Fathers all;
In haste they girded up their gowns,
And hied them to the wall.

THEY held a council standing
Before the river-gate;
Short time was there, ye well may guess,
For musing or debate.
Out spake the Consul roundly:
"The bridge must straight go down;
For, since Janiculum is lost,
Nought else can save the town."

JUST then a scout came flying,
All wild with haste and fear:
"To arms! to arms! Sir Consul;
Lars Porsena is here."
On the low hills to the westward
The Consul fixed his eye,
And saw the swarthy storm of dust
Rise fast along the sky.

AND nearer fast and nearer
Doth the red whirlwind come;
And louder still and still more loud,
From underneath that rolling cloud,
Is heard the trumpet's war-note proud,
The trampling, and the hum.
And plainly and more plainly
Now through the gloom appears,
Far to left and far to right,
In broken gleams of dark-blue light,
The long array of helmets bright,
The long array of spears.

AND plainly and more plainly,
Above that glimmering line,
Now might ye see the banners
Of twelve fair cities shine;
But the banner of proud Clusium
Was highest of them all,
The terror of the Umbrian,
The terror of the Gaul.

And plainly and more plainly
 Now might the burghers know,
 By port and vest, by horse and crest,
 Each warlike Lucumo.
 There Clinius of Arretium
 On his fleet roan was seen;
 And Astur of the fourfold shield,
 Girt with the brand none else may wield,
 Tolumnius with the belt of gold,
 And dark Verbenna from the hold
 By reedy Thrasymane.
 Fast by the royal standard,
 O'erlooking all the war,
 Lars Porsena of Clusium
 Sat in his ivory car.
 By the right wheel rode Mamilius,
 Prince of the Latian name;
 And by the left false Sextus,
 That wrought the deed of shame.
 But when the face of Sextus
 Was seen among the foes,
 A yell that rent the firmament
 From all the town arose.
 On the house-tops was no woman
 But spat towards him and hissed;
 No child but screamed out curses,
 And shook its little fist.
 But the Consul's brow was sad,
 And the Consul's speech was low,
 And darkly looked he at the wall,
 And darkly at the foe.
 "Their van will be upon us
 Before the bridge goes down;
 And if they once may win the bridge
 What hope to save the town?"
 Then out spake brave Horatius,
 The Captain of the Gate:
 "To every man upon this earth
 Death cometh soon or late;
 And how can man die better
 Than facing fearful odds
 For the ashes of his fathers
 And the temples of his gods?"
 "Hew down the bridge, Sir Consul,
 With all the speed ye may;
 I, with two more to help me,
 Will hold the foe in play.
 In yon strait path a thousand
 May well be stopped by three.
 Now, who will stand on either hand,
 And keep the bridge with me?"
 Then out spake Spurius Lartius,
 A Ramnian proud was he:
 "Lo, I will stand at thy right hand,
 And keep the bridge with thee."
 And out spake strong Herminius,

Of Titian blood was he:
 "I will abide on thy left side,
 And keep the bridge with thee."
 "Horatius," quoth the Consul,
 "As thou sayest, so let it be."
 And straight against that great array
 Forth went the dauntless Three;
 For Romans in Rome's quarrel
 Spared neither land nor gold,
 Nor son nor wife, nor limb nor life,
 In the brave days of old.
 Then none was for a party,
 Then all were for the State;
 Then the great man helped the poor,
 And the poor man loved the great;
 Then lands were fairly portioned;
 Then spoils were fairly sold;
 The Romans were like brothers
 In the brave days of old.
 Now Roman is to Roman
 More hateful than a foe,
 And the Tribunes beard the high,
 And the Fathers grind the low.
 As we wax hot in faction,
 In battle we wax cold;
 Wherefore men fight not as they fought
 In the brave days of old.
 Now while the Three were tightening
 Their harness on their backs,
 The Consul was the foremost man
 To take in hand an axe;
 And Fathers mixed with Commons
 Seized hatchet, bar, and crow,
 And smote upon the planks above,
 And loosed the props below.
 Meanwhile the Tuscan army,
 Right glorious to behold,
 Came flashing back the noonday light,
 Rank behind rank, like surges bright
 Of a broad sea of gold;
 Four hundred trumpets sounded
 A peal of warlike glee,
 As that great host, with measured tread,
 And spears advanced, and ensigns spread,
 Rolled slowly towards the bridge's head,
 Where stood the dauntless Three.
 The Three stood calm and silent,
 And looked upon the foes,
 And a great shout of laughter
 From all the vanguard rose;
 And forth three chiefs came spurring
 Before that deep array;
 To earth they sprang, their swords they
 drew,
 And lifted high their shields and flew
 To win the narrow way:

Aunus from green Tifernum,
 Lord of the Hill of Vines;
 And Seius, whose eight hundred slaves
 Sicken in Ilva's mines;
 And Picus, long to Clusium
 Vassal in peace and war,
 Who led to fight his Umbrian powers
 From that grey crag where, girt with
 towers,

The fortress of Nequinum lowers
 O'er the pale waves of Nar.

Stout Lartius hurled down Aunus
 Into the stream beneath;
 Herminius struck at Seius,
 And clove him to the teeth;
 At Picus brave Horatius
 Darted one fiery thrust;
 And the proud Umbrian's gilded arms
 Clashed in the bloody dust.

Then Ocnus of Falerii
 Rushed on the Roman Three;
 And Lausulus of Urgo,
 The rover of the sea;
 And Arnus of Volsinium,
 Who slew the great wild boar,
 The great wild boar that had his den
 Amidst the reeds of Cosa's fen,
 And wasted fields and slaughtered men
 Along Albinia's shore.

Herminius smote down Arnus;
 Lartius laid Ocnus low;
 Right to the heart of Lausulus
 Horatius sent a blow.
 "Lie there," he cried, "fell pirate!
 No more, aghast and pale,
 From Ostia's walls the crowd shall mark
 The track of thy destroying bark.
 No more Campania's hinds shall fly
 To woods and caverns when they spy
 Thy thrice accursed sail."

And now no sound of laughter
 Was heard among the foes.
 A wild and wrathful clamour
 From all the vanguard rose.
 Six spears' length from the entrance
 Halted that deep array,
 And for a space no man came forth
 To win the narrow way.

But hark! the cry is Astur:
 And lo! the ranks divide;
 And the great Lord of Luna
 Comes with his stately stride.
 Upon his ample shoulders
 Clangs loud the fourfold shield,
 And in his hand he shakes the brand
 Which none but he can wield.

He smiled on those bold Romans
 A smile serene and high;
 He eyed the flinching Tuscans,
 And scorn was in his eye.
 Quoth he, "The she-wolf's litter
 Stand savagely at bay;
 But will ye dare to follow
 If Astur clears the way?"

Then, whirling up his broadsword
 With both hands to the height,
 He rushed against Horatius,
 And smote with all his might.
 With shield and blade Horatius
 Right deftly turned the blow.
 The blow, though turned, came yet too
 nigh;
 It missed his helm, but gashed his thigh;
 The Tuscans raised a joyful cry
 To see the red blood flow.

He reeled, and on Herminius
 He leaned one breathing-space;
 Then, like a wild cat mad with wounds,
 Sprang right at Astur's face;
 Through teeth, and skull, and helmet
 So fierce a thrust he sped,
 The good sword stood a hand-breadth out
 Behind the Tuscan's head.

On Astur's throat Horatius
 Right firmly pressed his heel,
 And thrice and four times tugged amain
 Ere he wrenched out the steel.
 "And see," he cried, "the welcome,
 Fair guests, that waits you here!
 What noble Lucumo comes next
 To taste our Roman cheer?"

But meanwhile axe and lever
 Have manfully been plied;
 And now the bridge hangs tottering
 Above the boiling tide.
 "Come back, come back, Horatius!"
 Loud cried the Fathers all.
 "Back, Lartius! Back, Herminius!
 Back, ere the ruin fall!"

Back darted Spurius Lartius;
 Herminius darted back;
 And, as they passed, beneath their feet
 They felt the timbers crack.
 But when they turned their faces,
 And on the farther shore
 Saw brave Horatius stand alone,
 They would have crossed once more.

But with a crash like thunder
 Fell every loosened beam,

And, like a dam, the mighty wreck
 Lay right athwart the stream.
 And a long shout of triumph
 Rose from the walls of Rome,
 As to the highest turret-tops
 Was splashed the yellow foam.

And, like a horse unbroken
 When first he feels the rein,
 The furious river struggled hard,
 And tossed his tawny mane,
 And burst the curb, and bounded,
 Rejoicing to be free,
 And whirling down, in fierce career,
 Battlement, and plank, and pier,
 Rushed headlong to the sea.

Alone stood brave Horatius,
 But constant still in mind;
 Thrice thirty thousand foes before,
 And the broad flood behind.
 "Down with him!" cried false Sextus,
 With a smile on his pale face.
 "Now yield thee," cried Lars Porsena,
 "Now yield thee to our grace."

Round turned he, as not deigning
 Those craven ranks to see;
 Nought spake he to Lars Porsena,
 To Sextus nought spake he;
 But he saw on Palatinus
 The white porch of his home;
 And he spake to the noble river
 That rolls by the towers of Rome.

"Oh, Tiber! Father Tiber!
 To whom the Romans pray,
 A Roman's life, a Roman's arms,
 Take thou in charge this day!"
 So he spake, and speaking sheathed
 The good sword by his side,
 And with the harness on his back
 Plunged headlong in the tide.

Never, I ween, did swimmer,
 In such an evil case,
 Struggle through such a raging flood
 Safe to the landing-place;
 But his limbs were borne up bravely
 By the brave heart within,
 And our good Father Tiber
 Bore bravely up his chin.

And now he feels the bottom,
 Now on dry earth he stands;
 Now round him throng the Fathers
 To press his gory hands;

And now, with shouts and clapping,
 And noise of weeping loud,
 He enters through the River Gate,
 Borne by the joyous crowd.

They gave him of the corn-land,
 That was of public right,
 As much as two strong oxen
 Could plough from morn till night;
 And they made a molten image,
 And set it up on high,
 And there it stands unto this day
 To witness if I lie.

It stands in the Comitium,
 Plain for all folk to see;
 Horatius in his harness,
 Halting upon one knee:
 And underneath is written,
 In letters all of gold,
 How valiantly he kept the bridge
 In the brave days of old.

And still his name sounds stirring
 Unto the men of Rome,
 As the trumpet-blast that cries to them
 To charge the Volscian home:
 And wives still pray to Juno
 For boys with hearts as bold
 As his who kept the bridge so well
 In the brave days of old.

And in the nights of winter,
 When the cold north winds blow,
 And the long howling of the wolves
 Is heard amidst the snow;
 When round the lonely cottage
 Roars loud the tempest's din,
 And the good logs of Algidus
 Roar louder yet within;

When the oldest cask is opened,
 And the largest lamp is lit;
 When the chestnuts glow in the embers,
 And the kid turns on the spit;
 When young and old in circle
 Around the firebrands close;
 When the girls are weaving baskets,
 And the lads are shaping bows;

When the goodman mends his armour,
 And trims his helmet's plume;
 When the goodwife's shuttle merrily
 Goes flashing through the loom;
 With weeping and with laughter
 Still is the story told,
 How well Horatius kept the bridge
 In the brave days of old.

THE DONKEY

In these famous verses G. K. Chesterton begins, as so many do, by belabouring the patient ass sorely; but he makes a liberal recompense in his reminder of the glorious time when an ass carried Jesus into Jerusalem in the hour of His triumphal entry into that city, when the people acclaimed Him with Hosannas and strewed palms in His path.

WHEN fishes flew and forests walked
And figs grew upon thorn,
Some moments when the moon was blood,
Then surely I was born.

With monstrous head and sickening cry
And ears like errant wings,
The devil's walking parody
On all four-footed things.

The tattered outlaw of the earth,
Of ancient crooked will;
Starve, scourge, deride me: I am dumb,
I keep my secret still.

Fools! For I also had my hour;
One far fierce hour and sweet:
There was a shout about my ears,
And palms before my feet.

THE HEATHER

Scotland has appropriated the heather. There is plenty of it in England, here and there, and wherever it grows it captures the fancy and the heart; but Scotland reserves it as really hers. Neil Munro, novelist and poet, was a Scot of Scots, and here he gives us a fine poetic glimpse of the national feeling for the national garniture.

IF I were King of France, that noble fine
land,
And the gold was elbow deep within
my chests,
And my castles lay in scores along the
wine-land
With towers as high as where the eagle
nests;
If harpers sweet, and swordsmen stout
and vaunting,
My history sang, my stainless tartan
wore,
Was not my fortune poor, with one thing
wanting,
The heather at my door?

My galleys might be sailing every ocean,
Robbing the isles, and sacking hold and
keep,
My chevaliers go prancing at my notion,
To bring me back of cattle, horse, and
sheep;
Fond arms be round my neck, the young
heart's tether,
And true love-kisses all the night might
fill,
But oh! *mochree*, if I had not the heather
Before me on the hill!

A hunter's fare is all I would be craving,
A shepherd's plaiding and a beggar's
pay,
If I might earn them where the heather,
waving,
Gave fragrance to the day.
The stars might see me, homeless one and
weary,
Without a roof to fend me from the dew,
And still content, I'd find a bedding cheery
Where'er the heather grew!

THE DAFFODILS

No poet has felt a kinship with Nature more intensely and intimately than Wordsworth. This fine illustration of the appeal of natural beauty to the heart of man was written in 1804, when Wordsworth's poetic genius was at its height. The dancing daffodils carpeted a meadow skirting the lovely lake of Ullswater, and remained to him an unfading memory.

I WANDERED lonely as a cloud
That floats on high o'er vales and hills,
When all at once I saw a crowd,
A host of golden daffodils;
Beside the lake, beneath the trees,
Fluttering and dancing in the breeze.

Continuous as the stars that shine
And twinkle on the Milky Way,
They stretched in never-ending line
Along the margin of a bay:
Ten thousand saw I at a glance,
Tossing their heads in sprightly dance.

The waves beside them danced; but they
Out-did the sparkling waves in glee:
A poet could not but be gay
In such a jocund company;
I gazed, and gazed, but little thought
What wealth the show to me had brought:

For oft when on my couch I lie,
In vacant or in pensive mood,
They flash upon that inward eye
Which is the bliss of solitude;
And then my heart with pleasure fills,
And dances with the daffodils.

THE LAW THE LAWYERS KNOW ABOUT

The narrow limits of classified knowledge that is proud of itself are here happily exposed by H. D. C. Pepler, who realises that the simple things we do not know are more numerous than the things we do know and understand.

THE law the lawyers know about
Is property and land;
But why the leaves are on the trees.
And why the winds disturb the seas,
Why honey is the food of bees,
Why horses have such tender knees,
Why winters come and rivers freeze,
Why Faith is more than what one sees,
And Hope survives the worst disease,
And Charity is more than these,
They do not understand.

IF I FALL

These eight lines, which contain a noteworthy thought for everyone, are from the graceful pen of Janet Begbie.

IF I fall
 I hinder all;
 If I rise
 To the skies
 I shall help to drag the load
 One step farther on the road,
 On the common road we climb,
 Dead and living for all time.

THE BUGLE

The hope of the world has its perennial spring in the heart of youth. This cheering thought is here given the music of rhyme and the ring of faith by Harold Begbie. The poem was specially written for the Children's Newspaper.

WHO stands upon the mountain's crest,
 Heir of the burning sun,
 And with a trumpet at his lips
 Blows every call save one?
 'Tis Youth, whom none can overthrow,
 And nothing shall defeat;
 Hark how his lifted trumpet sounds
 All calls except Retreat.

The terrors of black night descend
 Upon that steadfast form;
 Fierce flash the lightnings, thunders roll,
 The chariot of the storm;
 But firmer still on that wild crag
 Youth plants his golden feet,
 And lifts his trumpet to his lips,
 And never sounds Retreat.

The night shall pass, the dawn will come;
 Fear not, ye trembling old,
 Man's path lies upward through the stars,
 And heaven is for the bold!
 Youth's trumpet rings from height to
 height.

On to the Judgment Seat!
 Only the coward soul would sound
 The traitor call Retreat!

Youth faces always to the Light,
 Great courage fills his heart,
 Ever for him the sun will shine,
 Ever the night depart:
 His faith is in the power of Right,
 His Truth no shame can cheat;
 Ten thousand times he'd rather die
 Than sound a base Retreat.

His trumpet rings wherever Right
 Goes up to conquer Wrong;
 Old Science hears it at his toil,
 The Poet through his song;
 In garrets where brave Genius starves,
 And on through street to street,
 The trumpet of the mountain calls:
 "On, Pilgrim! No retreat!"

ENGLAND AND AMERICA IN 1782

In these verses Tennyson expresses the feeling of all thoughtful men of the British Isles towards the Americans in their struggle for liberty near the end of the eighteenth century. British people should be proud that their American descendants inherited a love of freedom strong enough to defy the Motherland when she was tyrannous. John Hampden will be regarded as the whole world's champion of freedom to the very end of time.

() THOU, that sendest out the man
 To rule by land and sea,
 Strong mother of a Lion-line,
 Be proud of those strong sons of thine
 Who wrenched their rights from thee!

What wonder if in noble heat
 Those men thine arms withstood,
 Retaught the lesson thou hadst taught,
 And in thy spirit with thee fought,
 Who sprang from English blood!

But thou rejoice with liberal joy,
 Lift up thy rocky face,
 And shatter, when the storms are black,
 In many a streaming torrent back,
 The seas that shock thy base!

Whatever harmonies of law
 The growing world assume,
 Thy work is thine—The single note
 From that deep chord which Hampden
 smote
 Will vibrate to the doom.

WILLIAM BLAKE

This poem by James Thomson represents in some measure, but not with completeness, the isolation of William Blake. Blake was not unknown, nor was he unappreciated. His aloofness from men arose from the mystical character of his mind. His ideas and his art were not readily understood even by his friends, but he was far from friendless. Unlike the writer of these verses, "the poet of despair," Blake was happy in his mental isolation.

HE came to the desert of London town
 Grey miles long;
 He wandered up and he wandered down,
 Singing a quiet song.

He came to the desert of London town,
 Mirk miles broad;
 He wandered up and he wandered down,
 Ever alone with God.

There were thousands and thousands of
 human kind
 In this desert of brick and stone;
 But some were deaf and some were blind,
 And he was there alone.

At length the good hour came; he died
 As he had lived, alone:
 He was not missed from the desert wide;
 Perhaps he was found at the Throne.

TO A SKYLARK

Wordsworth wrote two poems to the lark, one *To the Skylark* (or the whole species) and the other *To a Skylark* (or a particular bird that influenced his mind as he listened to it). He was downhearted, but the happiness of the bird roused his spirit, and enabled him to feel contented. The poem *To the Skylark* (see page 6150) is the better known, but this address to the one cheering bird is a happy example of the poet's power of refreshing his soul from Nature.

Up with me! up with me into the clouds!
 For thy song, Lark, is strong;
 Up with me! up with me into the clouds!
 Singing, singing,
 With clouds and sky about thee ringing,
 Lift me, guide me, till I find
 That spot which seems so to thy mind!

I have walked through wildernesses
 dreary,
 And today my heart is weary;
 Had I now the wings of a fairy,
 Up to thee would I fly.
 There is madness about thee, and joy divine
 In that song of thine;
 Lift me, guide me, high and high,
 To thy banqueting-place in the sky.

Joyous as morning,
 Thou art laughing and scorning;
 Thou hast a nest of thy love and thy
 rest,
 And, though little troubled with sloth,
 Drunken Lark! thou wouldst be loth
 To be such a traveller as I.
 Happy, happy Liver,
 With a soul as strong as a mountain river
 Pouring out praise to the Almighty Giver,
 Joy and jollity be with us both! *

Alas! My journey, rugged and uneven,
 Through prickly moors or dusty ways
 must wind;
 But hearing thee, or others of thy kind,
 As full of gladness and as free of heaven,
 I, with my fate contented, will plod on
 And hope for higher raptures when life's
 day is done.

THE TWELVE-FORTY-FIVE

Joyce Kilmer, an American poet who was one of the saddest losses in the First World War, was a newspaper man who regularly caught a homeward train after midnight, and was one of the few who found poetry in a familiar railway ride. These lines are from a poem showing vividly how the 12.45 train in the dead of night appealed to him.

WITHIN the Jersey City shed
 The engine coughs and shakes its
 head.
 The smoke, a plume of red and white,
 Waves madly in the face of night.
 And now the grave, incurious stars
 Gleam on the groaning, hurrying cars.

Against the kind and awful reign
 Of darkness, this our angry train,
 A noisy little rebel, pouts
 Its brief defiance, flames and shouts;
 And passes on, and leaves no trace,
 For darkness holds its ancient place,
 Serene and absolute, the king,
 Unchanged, of every living thing.

The houses lie obscure and still
 In Rutherford and Carlton Hill.
 Our lamps intensify the dark
 Of slumbering Passaic Park.
 And quiet holds the weary feet
 That daily tramp through Prospect Street.
 What though we clang and clank and roar
 Through all Passaic's streets? No door
 Will open, not an eye will see
 Who this loud vagabond may be.
 Upon my crimson-cushioned seat,
 In manufactured light and heat,

I feel unnatural and mean.
 Outside the towns are cool and clean;
 Curtained awhile from sound and sight,
 They take God's gracious gift of night.

But of it let this thing be told,
 To its high honour be it said,
 It carries people home to bed.
My cottage lamp shines white and clear ;
God bless the train that brought me here !

GOD SAVE THE KING

Our National Anthem is not great as poetry, but is to millions the most stirring anthem in the world. We discuss its origin on page 6849.

GOD save our Gracious King,
 Long live our noble King,
 God save the King!
 Send him victorious,
 Happy and glorious,
 Long to reign over us,
 God save the King!

O Lord our God, arise,
 Scatter our enemies,
 And make them fall;
 Confound their politics,
 Frustrate their knavish tricks;
 On Thee our hopes we fix;
 God save us all.

Thy choicest gifts in store
 On him be pleased to pour,
 Long may he reign.
 May he defend our laws,
 And ever give us cause
 To sing with heart and voice,
 God save the King!

SHE WALKS IN BEAUTY

That Byron could write with all the charm of the Elizabethan masters of song may be seen in this sketch.

SHE walks in beauty, like the night
Of cloudless climes and starry skies;
And all that's best of dark and bright
Meet in her aspect and her eyes:
Thus mellowed to that tender light
Which heaven to gaudy day denies.

One shade the more, one ray the less,
Had half impaired the nameless grace
Which waves in every raven tress,
Or softly lightens o'er her face;
Where thoughts serenely sweet express
How pure, how dear, their dwelling-
place.

And on that cheek, and o'er that brow,
So soft, so calm, yet eloquent,
The smiles that win, the tints that glow,
But tell of days in goodness spent,
A mind at peace with all below,
A heart whose love is innocent!

GLORY TO THEE, MY GOD, THIS NIGHT

The writer of this oldest and best of evening hymns, Bishop Thomas Ken, was such a man as the writer of such a hymn ought to have been. He was honest to the core, and fearless in support of what he felt to be right. Ken's morning and evening hymns were written in 1674, for the boys of Winchester school, where he had been educated. Ken was one of the bishops who were sent to the Tower by the wretched James the Second; yet he would not take the oath to William the Third when he superseded James. The respect he commanded during his life has never waned.

GLORY to Thee, my God, this night
For all the blessings of the light;
Keep me, O keep me, King of kings,
Beneath Thy own almighty wings.

Forgive me, Lord, for Thy dear Son,
The ill that I this day have done,
That with the world, myself, and Thee
I, ere I sleep, at peace may be.

Teach me to live, that I may dread
The grave as little as my bed;
Teach me to die, that so I may
Rise glorious at the awful day.

O may my soul on Thee repose,
And may sweet sleep mine eyelids close,
Sleep that may me more vigorous make
To serve my God when I awake.

When in the night I sleepless lie
My soul with heavenly thoughts supply;
Let no ill dreams disturb my rest,
No powers of darkness me molest.

Praise God, from whom all blessings flow,
Praise Him, all creatures here below:
Praise Him above, Angelic host;
Praise Father, Son, and Holy Ghost.

AT THE GATE

The writer of these lines, whose name is Colwyn Philipps, expresses here the feeling, which must come to us all at times, that we can never completely know each other, however much we may wish to do so.

A WALL and gulf for ever lie between.
Not all that we may do through love
or wit

Can quite avail to pull away the screen,
Nor yet succeed in bridging o'er the pit.
He knows the reason, He that ordered it,
Who made us love but never understand.
He fixed the barrier as He saw fit,
And bade us yearn and still stretch forth
the hand

Across the very sea He said should ne'er
be spanned.

Be sure this great and aching love of mine,
That ever yearns to know and to be
known,

Can tear the veil that sometimes seems so
fine

As though 'twere cobweb waiting but the
blow

To fall asunder and for ever go.

E'en as I rise to strike it is too late,
The cobwebs billow, thicken, seem to grow
To a thick wall with buttress tall and
great.

I stand alone, a stranger at a city gate.

A MILE WITH ME

This sketch of the qualities that are most helpful in a friend is from the pen of Dr. Henry Van Dyke, one of America's best known poets and ambassadors. He was United States Minister to the Netherlands and Luxemburg from 1912 to 1917.

O WHO will walk a mile with me
Along life's merry way?

A comrade blithe and full of glee,
Who dares to laugh out loud and free,
And let his frolic fancy play,

Like a happy child, through the flowers
gay

That fill the field and fringe the way
Where he walks a mile with me.

And who will walk a mile with me
Along life's weary way?

A friend whose heart has eyes to see
The stars shine out o'er the darkening lea,
And the quiet rest at the end o' the day—
A friend who knows, and dares to say
The brave, sweet words that cheer the
way

Where he walks a mile with me.
With such a comrade, such a friend,
I fain would walk till journey's end,
Through summer sunshinè, winter rain,
And then? Farewell, we shall meet again!

FAREWELL

This graceful yet sad farewell to the Sun is from the pen of John Addington Symonds, a poet and able prose writer whose work took a minor tone owing to ill-health.

THOU goest; to what distant place
Wilt thou thy sunlight carry?
I stay with cold and clouded face;
How long am I to tarry?
Where'er thou goest morn will be;
Thou leavest night and gloom to me.

The night and gloom I can but take;
I do not grudge thy splendour.
Bid souls of eager men awake;
Be kind and bright and tender.
Give day to other worlds; for me
It must suffice to dream of thee.

THE CHORUS OF THE PITIES

This is taken from the close of Thomas Hardy's great poetic drama *The Dynasts*, which pictures the last ten years of the life of Napoleon. Spirits are portrayed as watching the scenes of the drama and the terrible deeds and sufferings of men in Napoleon's wars. Why does God allow such sufferings? The Chorus of Spirits representing the feeling of Pity here give the final reply, which is that the Divine Controller of the Universe is fulfilling a great plan we cannot comprehend, but which will bring all men at last into eternal joy, for the good that is in men shows that their Creator cannot be lacking in tender mercy.

TO Thee whose eye all Nature owns,
Who hurlest Dynasts from their
thrones,
And liftest those of low estate
We sing, with her men consecrate!

Yea, Great and Good, Thee, Thee we hail,
Who shak'st the strong, Who shield'st the
frail,
Who hadst not shaped such souls as we
If tender mercy lacked in Thee!

Though times be when the mortal moan
Seems unascending to Thy throne,
Though seers do not as yet explain
Why Suffering sobs to Thee in vain;

We hold that Thy unscanted scope
Affords a food for final Hope,
That mild-eyed Prescience ponders nigh
Life's loom, to lull it by and by.

Therefore we quire to highest height
The Wellwiller, the kindly Might,
That balances the Vast for weal,
That purges as by wounds to heal.

The systemed suns the skies enscroll
Obey Thee in their rhythmic roll,
Ride radiantly at Thy command,
Are darkened by Thy master hand!

And these pale, panting multitudes
Seen surging here, their moils, their moods,

All shall "fulfil their joy" in Thee,
In Thee abide eternally!

Exultant adoration give
The Alone, through Whom all living live,
The Alone, in Whom all dying die,
Whose means the End shall justify!

DRAKE'S DRUM

This heart-stirring poem by Sir Henry Newbolt, one of the most soundly famous of our modern patriotic poets, is based on the legendary supposition that if the great sea captain should ever be needed by England, in a time of dire extremity, he will be there to help. We take these verses from *Poems New and Old*, published by John Murray.

DRAKE he's in his hammock an' a
thousand mile away
(*Capt'n, art tha sleepin' there below ?*),
Slung atween the round shot in Nomb're
Dios Bay,
An' dreamin' arl the time o' Plymouth
Hoe.
Yarnder lumes the Island, yarnder lie the
ships,
Wi' sailor lads a dancin' heel-an'-toe,
An' the shore-lights flashin', an' the night-
tide dashin',
He sees et arl so plainly as he saw et
long ago.

Drake he was a Devon man, an' ruled the
Devon seas
(*Capt'n, art tha sleepin' there below ?*)
Rovin' tho' his death fell, he went wi'
heart at ease,
An' dreamin' arl the time o' Plymouth
Hoe.
"Take my drum to England, hang et by
the shore,
Strike et when your powder's runnin'
low;
If the Dons sight Devon, I'll quit the port
o' Heaven,
An' drum them up the Channel as we
drummed them long ago."

Drake he's in his hammock till the great
Armadas come
(*Capt'n, art tha sleepin' there below ?*),
Slung atween the round shot, listenin' for
the drum,
An' dreamin' arl the time o' Plymouth
Hoe.
Call him on the deep sea, call him up the
Sound,
Call him when ye sail to meet the foe;
Where the old trade's plyin' an' the old
flag flyin'
They shall find him ware an' wakin', as
they found him long ago!

TO MEADOWS

The lovely side of Robert Herrick's country muse, when he delights in flowers and in village customs, is most prettily illustrated in these verses. They tell how the meadows, but lately besprinkled with cowslips, have been despoiled doubtless for the making of old-fashioned cowslip wine. The poet brings before us a charming scene of long ago.

YE have been fresh and green,
Ye have been filled with flowers,
And ye the walks have been
Where maids have spent their hours.

You have beheld how they
With wicker arks did come
To kiss and bear away
The richer cowslips home.

You've heard them sweetly sing.
And seen them in a round;
Each virgin, like a spring,
With honeysuckles crowned.

But now we see none here
Whose silv'ry feet did tread,
And with dishevelled hair
Adorned this smoother mead.

Like unthrifths, having spent
Your stock, and needy grown,
You're left here to lament
Your poor estates, alone.

THE COMING OF SPRING

This charming description of the coming of Spring is from *White Rose and Red*, a story in verse by Robert Buchanan, who made his mark as poet, novelist, and dramatist.

THE swift is wheeling and gleaming,
The brook is brown in its bed,
Rain from the cloud is streaming,
And the Bow bends overhead;
The charm of the winter is broken!
The last of the spell is said!

The eel in the pond is quickening,
The grayling leaps in the stream;
What if the clouds are thickening?
See how the meadows gleam!
The spell of the winter is shaken;
The world awakes from a dream.

The fir puts out green fingers,
The pear tree softly blows,
The rose in her dark bower lingers,
But her curtains will soon unclosc,
And the lilac will shake her ringlets
Over the blush of the rose.

The swift is wheeling and gleaming,
The woods are beginning to ring,
Rain from the cloud is streaming;
There, where the Bow doth cling,
Summer is smiling afar off,
Over the shoulder of Spring.

VENICE

Every intelligent visitor to Venice must be thrilled by this sonnet, with the noble-sounding opening line. It was written in 1802, the year when Wordsworth wrote the greatest of his sonnets. The occasion was the handing over of Venice to Austria by Napoleon, and the suppression of the Venetian Republic. Already Venice had fallen from her high estate as mistress of the trade of the East, and Wordsworth evidently thought of her last change as bringing final ruin. But after his victory at Austerlitz, in 1805, Napoleon brought back Venice from Austria into Italy.

ONCE did she hold the gorgeous East in
fee,
And was the safeguard of the West: the
worth
Of Venice did not fall below her birth,
Venice, the eldest Child of Liberty,
She was a maiden city, bright and free;
No guile seduced, no force could violate;
And, when she took unto herself a mate,
She must espouse the everlasting sea.
And what if she had seen those glories
fade,
Those titles vanish, and that strength
decay;
Yet shall some tribute of regret be paid
When her long life hath reached its final
day:
Men are we, and must grieve when even
the shade
Of that which once was great is passed
away.

HOME, SWEET HOME

This song, expressing the love of home, is first favourite wherever the English language is spoken; but its writer, who was an American, never had a real home. John Howard Payne was an actor, born in 1792. In 1823 he produced in London an opera in which this song was first sung. But afterwards he lived a wandering life, and died in 1852.

MID pleasures and palaces though we
may roam,
Be it ever so humble, there's no place like
home!
A charm from the skies seems to hallow
us there,
Which, seek through the world, is ne'er
met with elsewhere.

*Home, home, sweet, sweet home!
There's no place like home!*

An exile from home, splendour dazzles in
vain!
Oh, give me my lowly thatched cottage
again!
The birds singing gaily that came at my
call—
Give me them! and the peace of mind
dearer than all!

*Home, home, sweet, sweet home!
There's no place like home!*

THE EARTH AND MAN

This charming comparison of the life-producing power of the earth with the joy-producing power of the human heart is from Stopford Brooke, whose reputation as a preacher and a literary critic of the nineteenth century somewhat obscured his merits as a poet. He lived from 1832 to 1916.

A LITTLE sun, a little rain,
A soft wind blowing from the west,
And woods and fields are sweet again,
And warmth within the mountain's
breast.

So simple is the earth we tread,
So quick with love and life her frame,
Ten thousand years have dawned and fled,
And still her magic is the same.

A little love, a little trust,
A soft impulse, a sudden dream,
And life as dry as desert dust
Is fresher than a mountain stream.

So simple is the heart of man,
So ready for new hope and joy;
Ten thousand years since it began
Have left it younger than a boy.

A CONSECRATION

This powerful poem was the introduction to *Salt Sea Ballads*, the first book of verse published by John Masfield. Not only is it remarkable for the intensity of the spirit of humanity which permeates it, but also as a prophecy of the later work of that boldly masculine poet. Mr. Masfield has been true to the ideal he pledged himself to pursue.

NOT of the princes and prelates with
periwigged charioteers
Riding triumphantly laurelled to lap the
fat of the years,
Rather the scorned, the rejected, the men
hemmed in with the spears;

The men of the tattered battalion which
fights till it dies,
Dazed with the dust of the battle, the din
and the cries,
The men with the broken heads and the
blood running into their eyes.

Not the be-medalled Commander, beloved
of the throne,
Riding cock-horse to parade when the
bugles are blown,
But the lads who carried the koppie and
cannot be known.

Not the ruler for me, but the ranker, the
tramp of the road,
The slave with the sack on his shoulders
pricked on with the goad,
The man with too weighty a burden, too
weary a load.

The sailor, the stoker of steamers, the man
with the clout,
The chantyman bent at the halliards
putting a tune to the shout,
The drowsy man at the wheel and the
tired look-out.

Others may sing of the wine and the wealth
and the mirth,
The portly presence of potentates goodly
in girth;
Mine be the dirt and the dross, the dust
and scum of the earth!

Theirs be the music, the colour, the glory,
the gold;
Mine be a handful of ashes, a mouthful of
mould.
Of the maimed, of the halt, and the blind
in the rain and the cold,

Of these shall my songs be fashioned, my
tale be told. Amen.

WHEN YOU ARE OLD

W. B. Yeats, the most famous of the later poets of Ireland, was a great master of musical words with mystical meanings that do not readily disclose themselves to the average reader. This is one of the best-known of his shorter poems.

We quote it from his volume of collected works.

WHEN you are old and grey and full of
sleep,

And nodding by the fire, take down this
book,

And slowly read and dream of the soft
look

Your eyes had once, and of their shadows
deep;

How many loved your moments of glad
grace,

And loved your beauty with love false
or true;

But one man loved the pilgrim soul in
you,

And loved the sorrows of your changing
face.

And bending down beside the glowing bars
Murmur, a little sadly, how love fled,

And paced upon the mountains over-
head,

And hid his face amid a crown of stars.

ON A PEOPLE'S POET

The idea that men may love a song till they spoil it is the burden of this clever couplet by Sir William Watson. But all true songs will live again and yet again.

YES, threadbare seem his songs, to
lettered ken.

They were worn threadbare next the
hearts of men.

BLOSSOMS

The graceful flow of Robert Herrick's fancy is charmingly seen in this brief song on the fragility of much that is beautiful. He pleads with the blossoms to stay a little while.

FAIR pledges of a fruitful tree,
Why do ye fall so fast?
Your date is not so past,
But you may stay yet here awhile
To blush and gently smile,
And go at last.

What! were ye born to be
An hour or half's delight,
And so to bid good-night?
'Twas pity Nature brought ye forth
Merely to show your worth,
And lose you quite.

But you are lovely leaves, where we
May read how soon things have
Their end, though ne'er so brave:
And after they have shown their pride
Like you awhile they glide
Into the grave.

THE MINISTRY OF ANGELS

This lovely poetical setting of the idea of angelic guardianship of human creatures occupies the first two stanzas of the eighth canto of the second book of Edmund Spenser's great poem *The Faerie Queene*, published in 1590.

AND is there care in Heaven? And is
there love
In heavenly spirits to these creatures base
That may compassion of their evils move?
There is—else much more wretched were
the case
Of men than beasts. But O! th' exceeding
grace
Of highest God, that loves His creatures so,
And all His works with mercy doth embrace,
That blessed angels He sends to and fro
To serve to wicked man, to serve his
wicked foe!

How oft do they their silver bowers leave
To come to succour us, that succour want?
How oft do they with golden pinions
cleave
The flitting skies, like flying pursuivant,
Against foul fiends to aid us militant?
They for us fight, they watch and duly
ward,
And their bright squadrons round about
us plant:
And all for love, and nothing for reward:
O why should heavenly God to men have
such regard?

LITTLE BOY BLUE

Among the tender poems about childhood that have touched the heart of the world none takes a dearer place than this, by Eugene Field, on the toys of Little Boy Blue.

THE little toy dog is covered with dust,
But sturdy and staunch he stands;
The little toy soldier is red with rust,
And his musket moulds in his hands.
Time was when the little toy dog was new,
And the soldier was passing fair;
And that was the time when our Little
Boy Blue
Kissed them and put them there.

"Now, don't you go till I come," he said,
"And don't you make any noise!"
So, toddling off to his trundle-bed,
He dreamt of the pretty toys.
And as he was dreaming an angel song
Awakened our Little Boy Blue:
Oh, the years are many, the years are long,
But the little toy friends are true!

Aye, faithful to Little Boy Blue they stand,
Each in the same old place,
Awaiting the touch of a little hand,
The smile of a little face;
And they wonder, as waiting the long
years through
In the dust of that little chair,
What has become of our Little Boy Blue
Since he kissed them and put them there.

LAKE ISLE OF INNISFREE

This call of the life of simplicity and rural beauty to man in a city's throng, expressed in the choicest melody of words by W. B. Yeats, has found its way into almost every selection of poems in the English tongue. We take these verse from his collected works.

I WILL arise and go now, and go to
Innisfree,
And a small cabin build there, of clay
and wattles made;
Nine bean rows will I have there, a hive
for the honey bee,
And live alone in the bee-loud glade.
And I shall have some peace there, for
peace comes dropping slow,
Dropping from the veils of the morning
to where the cricket sings.
There midnight's all a glimmer, and noon
a purple glow,
And evening full of the linnet's wings.
I will arise and go now, for always night
and day
I hear lake water lapping with low
sounds by the shore;
While I stand on the roadway, or on the
pavements gray,
I hear it in the deep heart's core.

CUCKOO SONG

This is the oldest song in the English language. It was written by John of Fornssete, a monk at Reading Abbey, in the thirteenth century, and shows how men's hearts responded then, as now, to the influences of Spring. Noo, or nu, is an ancient form of our word now, which still keeps its old sound in the Scottish tongue.

*SUMER is icumen in,
Lhude sing cuccu!
Groweth sed, and bloweth med,
And springth the wude nu:
Sing cuccu!*

*Awe bleteth after lomb,
Lhouth after calve cu ;
Bulluc sterteth, bucke verteth,
Murie sing cuccu !*

*Cuccu, cuccu, well singes thu, cuccu ;
Ne swike thu naver nu ;
Sing cuccu, nu, sing cuccu,
Sing cuccu, sing cuccu, nu !*

*SUMMER is a-coming in,
Loud sing cuckoo!
Groweth seed, and bloweth mead,
And springeth the wood new:
Sing cuckoo!*

*Ewe bleateth after lamb,
Loweth after calf cow;
Bullock starteth, buck verteth,
Merry sing cuckoo!*

*Cuckoo, cuckoo, well singest thou, cuckoo:
Nor cease thou ever noo;
Sing cuckoo, noo, sing cuckoo,
Sing cuckoo, sing cuckoo, noo!*

THE ROCK-A-BY LADY

Eugene Field, the American poet of childhood, had the rare gift of giving sweet singing words to the daintiest fancies of little children. Here we see how he could give a personal form to the influences which soothe the tired child into slumber. The poetry of a child going to sleep after the toy-born dreams of the day has never been caught more tenderly and sweetly than in these four verses.

*THE Rock-a-by Lady from Hush-a-by
Street
Comes stealing, comes creeping;
The poppies they hang from her head to
her feet,
And each hath a dream that is tiny and
fleet;
She bringeth her poppies to you, my sweet,
When she findeth you sleeping!*

*There is one little dream of a beautiful
drum,
"Rub-a-dub!" it goeth;
There is one little dream of a big sugar-
plum,
And lo! thick and fast the other dreams
come*

*Of pop-guns that bang and tin tops that
hum,
And the trumpet that bloweth !*

*And dollies peep out of those wee little
dreams*

*With laughter and singing;
And boats go a-floating on silvery streams,
And the stars peek-a-boo with their own
misty gleams.*

*And up, up, and up, where the Mother
Moon beams,
The fairies go winging!*

*Would you dream all these dreams that
are tiny and fleet?*

*They'll come to you sleeping;
So shut the two eyes that are weary, my
sweet,*

*For the Rock-a-by Lady from Hush-a-by
Street,*

*With poppies that hang from her head to
her feet,*

Comes stealing, comes creeping.

A LITTLE LIFE

This tender little picture of human life was written by George du Maurier (1834-1896), famed both as artist and author, *Tribby* being his best-known work.

*A LITTLE work, a little play—
To keep us going—and so—
Good-day.*

*A little warmth, a little light
Of love's bestowing—and so—
Good-night.*

*A little fun to match the sorrow
Of each day's growing—and so—
Good-morrow.*

*A little trust that when we die
We reap our sowing—and so—
Goodbye!*

TREES

A young poet of great promise whose life was cut short by the First World War was Joyce Kilmer, who was becoming widely known in America by his love of Nature and the freshness and simplicity of his style. He died when he was only thirty-one years old. Had he written nothing except this poem on a tree he would be long remembered.

*I THINK that I shall never see
A poem lovely as a tree,
A tree whose hungry mouth is prest
Against the Earth's sweet, flowing breast;
A tree that looks at God all day,
And lifts her leafy arms to pray;
A tree that may in summer wear
A nest of robins in her hair;
Upon whose bosom snow has lain;
Who intimately lives with rain.
Poems are made by fools like me,
But only God can make a tree.*

THE LAY OF THE LAST MINSTREL

Sir Walter Scott's Lay of the Last Minstrel, his first ambitious poem and one which attracted general attention, pictures an aged minstrel, the last of the wandering bards, arriving at a stately castle and receiving a friendly welcome from its mistress. In return he offers to play a long forgotten melody, and after a halting start bursts into the lay that makes the substance of the poetic romance. So well does he perform that the lady of the castle retains him there for the rest of his life. Here we give the opening and close of the poem—the reception and reward of the aged harper.

THE way was long, the wind was cold;

The Minstrel was infirm and old;

His withered cheek and tresses gray

Seemed to have known a better day;

The harp, his sole remaining joy,

Was carried by an orphan boy.

The last of all the Bards was he,

Who sung of Border chivalry;

For, well-a-day! their date was fled,

His tuneful brethren all were dead;

And he, neglected and oppressed,

Wished to be with them, and at rest.

No more on prancing palfrey borne,

He carolled, light as lark at morn;

No longer courted and caressed,

High placed in hall, a welcome guest,

He poured to lord and lady gay

The unpremeditated lay.

Old times were changed, old manners gone;

A stranger filled the Stuarts' throne;

The bigots of the iron time

Had called his harmless art a crime.

A wandering harper, scorned and poor,

He begged his bread from door to door,

And turned, to please a peasant's ear,

The harp a king had loved to hear.

He passed where Newark's stately tower

Looks out from Yarrow's birchen bower;

The Minstrel gazed with wistful eye,

No humbler resting-place was nigh.

With hesitating step at last

The embattled portal arch he passed,

Whose ponderous grate and massy bar

Had oft rolled back the tide of war,

But never closed the iron door

Against the desolate and poor.

The Duchess marked his weary pace,

His timid mien, and reverend face,

And bade her page the menials tell

That they should tend the old man well;

For she had known adversity,

Though born in such a high degree;

In pride of power, in beauty's bloom,

Had wept o'er Monmouth's bloody tomb!

When kindness had his wants supplied,

And the old man was gratified,

Began to rise his minstrel pride:

And he began to talk anon

Of good Earl Francis, dead and gone,

And of Earl Walter, rest him, God!

A braver ne'er to battle rode:

And how full many a tale he knew

Of the old warriors of Buccleuch;

And would the noble Duchess deign

To listen to an old man's strain,

Though stiff his hand, his voice though weak,

He thought even yet the sooth to speak,

That, if she loved the harp to hear,

He could make music to her ear.

The humble boon was soon obtained:

The aged Minstrel audience gained.

But, when he reached the room of state,

Where she with all her ladies sate,

Perchance he wished his boon denied;

For, when to tune his harp he tried,

His trembling hand had lost the ease

Which marks security to please;

And scenes long past, of joy and pain,

Came wildering o'er his aged brain;

He tried to tune his harp in vain!

The pitying Duchess praised its chime,

And gave him heart, and gave him time,

Till every string's according glée

Was blended into harmony.

And then, he said, he would full fain

He could recall an ancient strain

He never thought to sing again.

It was not framed for village churls,

But for high dames and mighty earls;

He had played it to King Charles the Good

When he kept court in Holyrood;

And much he wished, yet feared, to try

The long-forgotten melody.

Amid the strings his fingers strayed,

And an uncertain warbling made,

And oft he shook his hoary head.

But when he caught the measure wild

The old man raised his face and smiled;

And lightened up his faded eye

With all a poet's ecstasy.

In varying cadence, soft or strong,

He swept the sounding chords along;

The present scene, the future lot,

His toils, his wants, were all forgot;

Cold diffidence and age's frost

In the full tide of song were lost;

Each blank, in faithless memory void,

The poet's glowing thought supplied;

And, while his harp responsive rung,

'Twas thus the Latest Minstrel sung.

Hushed is the harp—the Minstrel gone.

And did he wander forth alone?

Alone, in indigence and age,

To linger out his pilgrimage?

No; close beneath proud Newark's tower
 Arose the Minstrel's lowly bower;
 A simple hut; but there was seen
 The little garden hedged with green,
 The cheerful hearth, and lattice clean.

So passed the winter's day, but still,
 When summer smiled on sweet Bow hill,
 And July's eve, with balmy breath,
 Waved the bluebells on Newark heath;
 When throstles sung in Harehead shaw,
 And corn was green on Carterhaugh,
 And flourish broad, Blackandro's oak,
 The aged harper's soul awoke!
 Then would he sing achievements high,
 And circumstance of chivalry,
 Till the rapt traveller would stay,
 Forgetful of the closing day;
 And noble youths, the strain to hear,
 Forsook the hunting of the deer;
 And Yarrow, as he rolled along,
 Bore burden to the Minstrel's song.

TO A MOUSE

In none of his poems is the intense sympathy of Robert Burns with animal life seen more clearly than in these tender verses, written after he had turned up a nest of mice with his plough. The poem comes straight from the heart, and goes straight to every heart that is naturally kind. It was written in 1785, the year before Burns published his first volume of poems. The meanings of the Scottish words are: brattle, hurry; pattle, a plough-staff; daimen-icker in a thrave, an ear of corn now and then; lave, rest; snell, biting; cranreuch, hoar-frost; a-gley, aslant; no thy lane, not alone.

WEE, sleekit, cow'rin', tim'rous beastie,
 O what a panic's in thy breastie!
 Thou need na start awa sae hasty,
 Wi' bickering brattle!
 I wad be laith to rin an' chase thee
 Wi' murd'ring pattle!

I'm truly sorry man's dominion
 Has broken Nature's social union,
 An' justifies that ill opinion
 Which makes thee startle
 At me, thy poor earth-born companion
 An' fellow-mortal!

I doubt na, whiles, but thou mayst thief;
 What then? poor beastie, thou maun live!
 A daimen-icker in a thrave
 'S a sma' request:
 I'll get a blessing wi' the lave,
 And never miss 't!

Thy wee bit housie, too, in ruin!
 Its silly wa's the win's are strewin'!
 An' naething now to big a new ane,
 O' foggage green!
 An' bleak December's winds ensuin',
 Baith snell an' keen!

Thou saw the fields laid bare and waste,
 An' weary winter comin' fast,
 An' cozie here, beneath the blast,
 Thou thought to dwell,
 Till crash! the cruel coulter past
 Out-thro' thy cell.

That wee bit heap o' leaves an' stibble
 Has cost thee mony a weary nibble!
 Now thou's turned out, for a' thy trouble,
 But house or hald,
 To thole the winter's sleety dribble,
 An' cranreuch cauld!

But, Mousie, thou art no thy lane
 In proving foresight may be vain;
 The best-laid schemes o' mice an' men
 Gang aft a-gley,
 An' lea'e us nought but grief an' pain
 For promised joy.

Still thou art blest compared wi' me!
 The present only toucheth thee:
 But oh! I backward cast my e'e
 On prospects drear!
 An' forward though I canna see,
 I guess an' fear!

I AM

There are no more pathetic lines than these in the English tongue. They were written by John Clare, a poor peasant who spent much of his life in a workhouse asylum. We hear in them the cry of a forsaken genius who was sufficiently sane to shape his plaint into a poignant song.

I AM! yet what I am who cares, or knows?
 My friends forsake me like a memory lost.

I am the self-consumer of my woes;
 They rise and vanish, an oblivious host,
 Shadows of life, whose very soul is lost.
 And yet I am—I live—though I am tossed

Into the nothingness of scorn and noise,
 Into the living sea of waking dream,
 Where there is neither sense of life, nor
 joys,
 But the huge shipwreck of my own esteem
 And all that's dear. Even those I loved the
 best
 Are strange—nay, they are stranger than
 the rest.

I long for scenes where man has never
 trod,
 For scenes where woman never smiled or
 wept,
 There to abide with my Creator, God,
 And sleep as I in childhood sweetly slept,
 Full of high thoughts, unborn. So let
 me lie,
 The grass below; above, the vaulted sky.

TO THE SMALL CELANDINE

Wordsworth was a lover of flowers, yet it took him thirty years to discover the modest celandine. When he did notice it as a herald of Spring, he gave it long withheld fame in these bright, easy, and enthusiastic verses. They were written in 1802. The book name of the lesser celandine is the *ranunculus ficaria*, and its popular name the pilewort.

PANSIES, lilies, kingcups, daisies,
Let them live upon their praises;
Long as there's a Sun that sets,
Primroses will have their glory;
Long as there are violets,
They will have a place in story:
There's a flower that shall be mine,
Tis the little Celandine.

Eyes of some men travel far
For the finding of a star;
Up and down the heavens they go,
Men that keep a mighty rout!
I'm as great as they, I trow,
Since the day I found thee out,
Little flower, I'll make a stir,
Like a sage astronomer.

Modest, yet withal an elf
Bold, and lavish of thyself;
Since we needs must first have met
I have seen thee, high and low.
Thirty years or more, and yet
Twas a face I did not know;
Thou hast now, go where I may,
Fifty greetings in a day.

Ere a leaf is on a bush,
In the time before the thrush
Has a thought about her nest,
Thou wilt come with half a call,
Spreading out thy glossy breast
Like a careless prodigal;
Telling tales about the Sun
When we've little warmth, or none.

Poets, vain men in their mood,
Travel with the multitude:
Never heed them; I aver
That they all are wanton wooers;
But the thrifty cottager,
Who stirs little out of doors,
Joys to spy thee near her home;
Spring is coming, thou art come!

Comfort have thou of thy merit,
Kindly, unassuming spirit!
Careless of thy neighbourhood,
Thou dost show thy pleasant face
On the moor, and in the wood,
In the lane; there's not a place,
Howsoever mean it be,
But tis good enough for thee.

Ill befall the yellow flowers,
Children of the flaring hours!
Buttercups, that will be seen,
Whether we will see or no;
Others, too, of lofty mien;
They have done as worldlings do,
Taken praise that should be thine,
Little, humble Celandine.

Prophet of delight and mirth,
Ill-requited upon Earth;
Herald of a mighty band,
Of a joyous train ensuing,
Serving at my heart's command,
Tasks that are no tasks renewing,
I will sing, as doth behove,
Hymns in praise of what I love!

THE UNSEEN PLAYMATE

Robert Louis Stevenson in this poem (reprinted from *A Child's Garden of Verses* by permission of Messrs Longmans) has written a beautiful piece of fancy. He almost makes us see this unseen playmate. He means, of course, the gentle spirit of happiness and of true childhood joy which makes each little boy or girl never feel lonely.

WHEN children are playing alone on the
green
In comes the playmate that never was seen.
When children are happy and lonely and
good
The Friend of the Children comes out of
the wood.

Nobody heard him and nobody saw,
His is a picture you never could draw;
But he's sure to be present, abroad or at
home,
When children are happy and playing
alone.

He lies in the laurels, he runs on the grass,
He sings when you tinkle the musical
glass;
Whene'er you are happy and cannot tell
why,
The Friend of the Children is sure to be by!

He loves to be little, he hates to be big,
Tis he that inhabits the caves that you
dig;
Tis he, when you play with your soldiers
of tin,
That sides with the Frenchmen and never
can win.

Tis he, when at night you go off to your bed,
Bids you go to your sleep and not trouble
your head;
For wherever they're lying, in cupboard
or shelf,
Tis he will take care of your playthings
himself!

TO A BULLDOG

It is not strange that the terrible burden of the world's loss of millions of glorious dead through war should find expression in literature that melts the heart. Among the few war poems that sound the depths of unavailing sorrow this address to a bulldog by Sir John Squire stands conspicuous. Captain W. H. Squire (Acting Major), Royal Field Artillery, was killed in 1917. What it meant to one household is reflected, through the dog that missed him, with a pathos that makes reading aloud almost impossible. Sir John Squire, distinguished as a poet and a literary critic, published the volume containing the poem through Messrs. Hodder & Stoughton, and we warmly commend his poems to the rising generation.

WE shan't see Willy any more, Mamie,
He won't be coming any more:
He came back once and again and again,
But he won't get leave any more.

We looked from the window and there was
his cab,
And we ran downstairs like a streak,
And he said, "Hullo, you bad dog," and
you crouched to the floor,
Paralysed to hear him speak.

And then let fly at his face and his chest
Till I had to hold you down,
While he took off his cap and his gloves
and his coat,
And his bag and his thonged Sam
Browne.

We went upstairs to the studio,
The three of us, just as of old,
And you lay down and I sat and talked
to him
As round the room he strolled.

Here in the room where, years ago
Before the old life stopped,
He worked all day with his slippers and
his pipe,
He would pick up the threads he'd
dropped.

Fondling all the drawings he had left
behind,
Glad to find them all still the same,
And opening the cupboards to look at his
belongings
. . . Every time he came.

But now I know what a dog doesn't know,
Though you'll thrust your head on my
knee,
And try to draw me from the absent-
mindedness
That you find so dull in me.

And all your life you will never know
What I wouldn't tell you even if I could,
That the last time we waved him away
Willy went for good.

But sometimes as you lie on the hearthrug
Sleeping in the warmth of the stove,
Even through your muddled old canine
brain
Shapes from the past may rove.

You'll scarcely remember, even in a dream,
How we brought home a silly little pup,
With a big square head and little crooked
legs
That could scarcely bear him up;

But your tail will tap at the memory
Of a man whose friend you were,
Who was always kind, though he called
you a nasty dog
When he found you on his chair.

Who'd make you face a reproving finger
And solemnly lecture you
Till your head hung downwards and you
looked very sheepish!
And you'll dream of your triumphs too.

Of summer evening chases in the garden
When you dodged us all about with a
bone:
We were three boys, and you were the
cleverest,
But now we're two alone.

When summer comes again,
And the long sunsets fade,
We shall have to go on playing the feeble
game for two
That since the war we've played.

And though you run expectant as you
always do
To the uniforms we meet,
You'll never find Willy among all the
soldiers
In even the longest street.

Nor in any crowd; yet, strange and bitter
thought,
Even now were the old words said,
If I tried the old trick and said "Where's
Willy?"

You would quiver and lift your head,
And your brown eyes would look to ask if
I were serious,
And wait for the word to spring.
Sleep undisturbed: I shan't say *that* again,
You innocent old thing.

I must sit, not speaking, on the sofa,
While you lie asleep on the floor;
For he's suffered a thing that dogs couldn't
dream of,
And he won't be coming here any more.

WOODMAN, SPARE THAT TREE

This long, popular sentimental song had an American origin. It springs from an incident witnessed by George P. Morris, the writer of the song. A friend with whom he was riding turned aside to see a tree planted by his grandfather, and by it they found a man sharpening his axe to cut it down. The friend interposed by buying the tree and arranging for its preservation. Morris, on reaching home, at once expressed his friend's appeal in the words of the song, which attained a world-wide circulation. George P. Morris, who was born in 1802, was an American brigadier-general and a writer of many songs. He died in New York in 1864.

WOODMAN, spare that tree! Touch not
a single bough!

In youth it sheltered me, and I'll protect
it now.

'Twas my forefather's hand that placed
it near his cot;

There, woodman, let it stand; thy axe
shall harm it not!

That old familiar tree, whose glory and
renown

Are spread o'er land and sea. And
wouldst thou hew it down?

Woodman, forbear thy stroke! Cut not
its earth-bound ties;

O, spare that aged oak, now towering to
the skies.

When but an idle boy I sought its grateful
shade;

In all their gushing joy here, too, my
sisters played.

My mother kissed me here, my father
pressed my hand;

Forgive the foolish tear; but let that old
oak stand.

My heart-strings round thee cling, close
as thy bark, old friend;

Here shall the wild bird sing, and still thy
branches bend.

Old tree, the storm still brave! And,
woodman, leave the spot;

While I've a hand to save, thy axe shall
harm it not.

PIPPA'S SONG

This lovely and famous early morning song is from a poem by Robert Browning called Pippa Passes. Pippa is an Italian girl who works hard and rarely has a holiday, but when the looked-for day comes, she goes out and sings songs wherever she goes, and her passing by has an influence for good on all the people who hear her voice.

THE year's at the spring,
And day's at the morn;
Morning's at seven;
The hillside's dew-pearled;
The lark's on the wing;
The snail's on the thorn;
God's in His heaven;
All's right with the world.

INFANT JOY

William Blake, who always had a good deal of the child in him, here babbles and coos as child to child.

I HAVE no name;
I am but two days old.
What shall I call thee?
"I happy am,
Joy is my name."
Sweet joy befall thee!

Pretty Joy!
Sweet Joy, but two days old.
Sweet Joy I call thee;
Thou dost smile,
I sing the while,
Sweet joy befall thee!

THE DAYS GONE BY

This poem by James Whitcomb Riley is a natural echo from a very happy boyhood. There are some points in it which are not true to English conditions. We cannot imagine a quail being as sweet as the nightingale, for instance. But remembrance of our earliest youth is the last to leave us, and most pitiable are they by whom it is not joyous.

O THE days gone by! O the days gone
by!

The apples in the orchard, and the path-
way through the rye;

The chirrup of the robin, and the whistle
of the quail

As he piped across the meadows sweet as
any nightingale;

When the bloom was on the clover, and
the blue was in the sky,

And my happy heart brimmed over, in the
days gone by.

In the days gone by, when my naked feet
were tripped

By the honeysuckle tangles where the
water-lilies dipped,

And the ripples of the river lipped the moss
along the brink

Where the placid-eyed and lazy-footed
cattle came to drink,

And the tilting snipe stood fearless of the
truant's wayward cry,

And the splashing of the swimmer, in the
days gone by.

O the days gone by! O the days gone by!
The music of the laughing lip, the lustre
of the eye;

The childish faith in fairies, and Aladdin's
magic ring,

The simple, soul-reposing, glad belief in
everything;

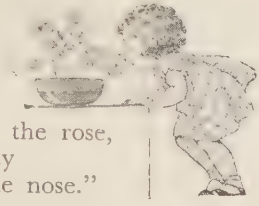
When life was like a story holding neither
sob nor sigh,

In the golden olden glory of the days
gone by.

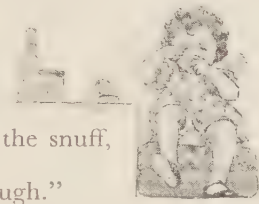
LITTLE VERSES FOR VERY LITTLE PEOPLE

THE DIFFERENCE

EIGHT fingers,
Ten toes,
Two eyes,
And one nose.
Baby said,
When she smelt the rose,
"Oh! what a pity
I've only got one nose."



Ten teeth
In even rows,
Three dimples,
And one nose.
Baby said,
When she smelt the snuff,
"Deary me!
One nose is enough."



Laura E. Richards

EYES AND NO EYES

WHAT, Charles returned! Papa exclaimed.

"How short your walk has been!
But Thomas—Julia—where are they?
Come, tell me what you've seen."

"So tedious, stupid, dull a walk!"
Said Charles; "I'll go no more;
First stopping here, then lagging there,
O'er this and that to pore."

"I crossed the fields near Woodland House
And just went up the hill;
Then by the river-side came down,
Near Mr. Fairplay's mill."

Now Tom and Julia both ran in;
"Oh, dear Papa!" said they,
"The sweetest walk we both have had!
Oh, what a pleasant day!"

"Near Woodland House we crossed the
fields,

And by the mill we came."

"Indeed!" exclaimed Papa, "how's this?
Your brother did the same;

"But very dull he found the walk.
What have you there? Let's see!
Come, Charles, enjoy this charming treat,
As new to you as me."

"First look, Papa, at this small branch,
Which on a tall oak grew,
And by its slimy berries white
The mistletoe we knew."

"A bird all green ran up a tree,
A woodpecker we call,
Who, with his strong bill, wounds the
bark,
To feed on insects small."

"And many lapwings cried pee-wit;
And one among the rest
Pretended lameness to decoy
Us from her lonely nest."

"Young starlings, martins, swallows, all
Such lovely flocks so gay;
A heron, too, which caught a fish,
And with it flew away."

"This bird we found, a kingfisher;
Though dead, his plumes how bright!
Do have him stuffed, my dear Papa,
'Twill be a charming sight."

"When reached the heath, how wide the
space!

The air, how fresh and sweet!
We plucked these flowers and different
heaths,

The fairest we could meet."

"The distant prospect we admired,
The mountains far and blue;
A mansion here, a cottage there;
See, here's the sketch we drew."

"A splendid sight we next beheld,
The glorious setting sun,
In clouds of crimson, purple, gold;
His daily race was done."

"True taste with knowledge," said Papa,
"By observation's gained;
You've both well used the gift of sight,
And this reward obtained."

"My Julia in this desk will find
A drawing-box quite new;
This spy-glass, Tom, you oft desired,
I think it now your due."

"And pretty toys and pretty gifts
For Charles, too, shall be bought
When he can see the works of God,
And prize them as he ought."

Adelaide O'Keeffe

INTO THE WORLD AND OUT

INTO the world he looked with sweet
surprise;
The children laughed so when they saw
his eyes.

Into the world a rosy hand in doubt
He reached—a pale hand took one rose-
bud out.

"And that was all—quite all!" No,
surely! But
The children cried so when his eyes were
shut.

Sarah M. B. Piatt

LITTLE VERSES FOR VERY LITTLE PEOPLE

THE MONTHS

JANUARY brings the snow,
Makes our feet and fingers glow.

February brings the rain,
Thaws the frozen lake again.

March brings breezes sharp and chill,
Shakes the dancing daffodil.

April brings the primrose sweet,
Scatters daisies at our feet.

May brings flocks of pretty lambs,
Sporting round their fleecy dams.

June brings tulips, lilies, roses,
Fills the children's hands with posies.

Hot July brings thunder-showers,
Apricots, and gilly-flowers.

August brings the sheaves of corn:
Then the harvest home is borne.

Warm September brings the fruit;
Sportsmen then begin to shoot.

Brown October brings the pheasant,
Then to gather nuts is pleasant.

Dull November brings the blast—
Hark! the leaves are whirling fast.

Cold December brings the sleet,
Blazing fire, and Christmas treat.

Sarah Coleridge

FIDDLE-DEE-DEE

THERE once was a bird that lived up in
a tree,
And all he could whistle was Fiddle-dee-dee!—

A very provoking, unmusical song
For one to be whistling the summer day
long!
Yet always contented and busy was he
With that vocal recurrence of Fiddle-dee-dee!

Hard by lived a brave little soldier of four,
That weird iteration annoyed him to sore:
"I prithee, Dear-Mother-Mine, fetch me
my gun,
For, by our St. Didy, the deed must be
done
That shall presently rid all creation and me
Of that ominous bird and his Fiddle-dee-dee!"

Then out came Dear-Mother-Mine, bring-
ing her son
His awfully truculent little red gun;
The stock was of pine and the barrel of tin,
The "bang" it came out where the bullet
went in:
The right kind of weapon, I think you'll
agree,
For slaying all fowl that go Fiddle-dee-dee!

The brave little soldier quoth never a word
But he up and he drew a straight bead on
that bird;
And while that vain creature provokingly
sang
The gun it went off with a terrible bang!
Then loud laughed the youth, "By my
Bottle," cried he,
"I've put a quietus on Fiddle-dee-dee!"

Out came then Dear-Mother-Mine, say-
ing: "My son,
Right well have you wrought with your
little red gun!
Hereafter no evil at all need I fear
With such a brave soldier as You-My-Love
here!"

She kissed the dear boy. *The bird in the
tree
Continued to whistle his Fiddle-dee-dee!*

Eugene Field

I THINK WHEN I READ

I THINK when I read that sweet story of
old,
When Jesus was here among men,
How He called little children as lambs to
His fold,
I should like to have been with Him then.
I wish that His hands had been placed on
my head,
That His arm had been thrown around
me,
And that I might have seen His kind look
when he said:
"Let the little ones come unto Me."

Yet still to His footstool in prayer I may go,
And ask for a share in His love;
And if I thus earnestly seek Him below
I shall see Him and hear Him above,
In that beautiful place He has gone to
prepare
For all that are washed and forgiven;
And many dear children are gathering
there,
"For of such is the kingdom of heaven."

Jemima Thompson Luke

BYE, BABY BUNTING

BYE, Baby Bunting,
Daddy's gone a-hunting
To get a little rabbit-skin
To wrap my Baby Bunting in.

JOHNNY'S FROLIC

HO! for a frolic!
Said Johnny the stout :
"There's coasting and sledding;
I'm going out!"
Scarcely had Johnny
Plunged in the snow
When there came a complaint
Up from his toe.
"We're cold," said the toe,
"I and the rest;
There are ten of us freezing,
Standing abreast."
Then up spoke an ear:
"My! but it's labour
Playing in winter. Eh,
Opposite neighbour?"
"Pooh!" said his nose;
Angry and red;
"Who wants to tingle?
Go home to bed!"

Eight little fingers,
Four to a thumb,
All cried together,
'Johnny, we're numb!'

But Johnny the stout
Wouldn't listen a minute;
Never a snow-bank
But Johnny was in it.

Tumbling and jumping,
Shouting with glee,
Wading the snow-drifts
Up to his knee.

Soon he forgot them,
Fingers and toes,
Never once heeded
The ear and the nose.

Ah, what a frolic!
All in a glow,
Johnny grew warmer
Out in the snow.

Often his breathing
Came with a joke:
"Blaze away, Johnny!
I'll do the smoke."

"And I'll do the fire,"
Said Johnny the bold,
"Fun is the fuel
For driving off cold."



CUCKOO IN THE PEAR-TREE

THE Cuckoo sat in the old pear-tree.
Cuckoo!
Raining or snowing, naught cared he.
Cuckoo!
Cuckoo, cuckoo, naught cared he.
The Cuckoo flew over a housetop nigh.
Cuckoo!
"Dear, are you at home, for here am I?
Cuckoo!
Cuckoo, cuckoo, here am I."
"I dare not open the door to you.
Cuckoo!
Perhaps you are not the right cuckoo?
Cuckoo!
Cuckoo, cuckoo, the right cuckoo!"
"I am the right Cuckoo, the proper one,
Cuckoo!
For I am my father's only son,
Cuckoo!
Cuckoo, cuckoo, his only son."
"If you are your father's only son—
Cuckoo!

The bobbin pull tightly,
Come through the door lightly—
Cuckoo!

If you are your father's only son—
Cuckoo!

It must be you, the only one—
Cuckoo, cuckoo, my own Cuckoo!
Cuckoo!"

William Brighty Rands

THERE WAS A LITTLE MAN

THERE was a little man
Who wooed a little maid;
And he said: "Little maid, will you wed,
wed, wed?
I have little more to say,
So will you ay or nay?
For the least said is soonest men-ded, ded,
ded."

Then the little maid replied:
"Should I be your little bride,
Pray what must we have for to eat, eat,
eat?
Will the flame that you're so rich in
Light a fire in the kitchen?
Or the little God of Love turn the spit,
spit, spit?"

THE DOVE AND THE WREN

THE dove says, 'Coo, coo; what shall I do?
I can scarce maintain two.'
'Pooh, pooh!' says the wren; 'I have
got ten,
And keep them all like gentlemen.'

WHAT's the news of the day,
Good neighbour, I pray?
They say the balloon
Is gone up to the Moon!

MARCH winds and April showers
Bring forth May flowers.

THERE is a rainbow in the sky,
On the arch where the tempests trod;
God wrote it ere the world was dry:
'Tis the autograph of God.

THE Hart he loves the high wood,
The Hare he loves the hill,
The Knight he loves his bright sword,
The Lady loves her will.

EVERY lady in this land
Has five nails upon her hand,
Twenty on her hands and feet;
All this is true, without deceit.

IF all the world were apple pie,
And all the sea were ink,
And all the trees were bread-and-cheese,
What should we have to drink?

GOOD-MORROW to you, Valentine!
Curl your locks as I do mine;
Two before and three behind.
Good-morrow to you, Valentine!

FOR want of the nail the shoe was lost;
For want of the shoe the horse was lost;
For want of the horse the rider was lost;
For want of the rider the battle was lost;
For want of the battle the kingdom was
lost;
And all for the want of a horse-shoe nail.

HERE's a poor widow from Babylon,
With six poor children all alone;
One can bake and one can brew,
One can shape and one can sew,
One can sit by the fire and spin,
One can bake a cake for a king.
Come choose you East, come choose you
West,
Come choose you the one that you love
the best.

LITTLE Boy Blue, come blow your horn,
The sheep's in the meadow, the cow's
in the corn;
But where is the boy that looks after the
sheep?
He's under a haystack, fast asleep.

GEORGIE Porgie, Pudding and Pie,
Kissed the girls and made them cry.
When the boys came out to play
Georgie Porgie ran away.

SING, sing, what shall I sing?
The cat has eaten the pudding-string!
Do, do, what shall I do?
The cat has bitten it quite in two.

QUEEN ANNE, Queen Anne, she sits in
the sun,
As fair as the lily, as white as the swan.

THERE was a little boy went into a field,
And lay down on some hay;
An owl came out and flew about,
And the little boy ran away.

THE girl in the lane that couldn't speak
plain
Cried gobble, gobble, gobble;
The man on the hill that couldn't stand
still
Went hobble, hobble, hobble.

SEA-GULL, sea-gull, sit on the sand;
It's never good weather when you're
on the land.

BAA, baa, black sheep, have you any
wool?
Yes, sir, yes, sir, three bags full;
One for the master, and one for the dame,
And one for the little boy that cries down
the lane.

TO market, to market, to buy a fat pig,
Home again, home again, Jiggety
Jig.

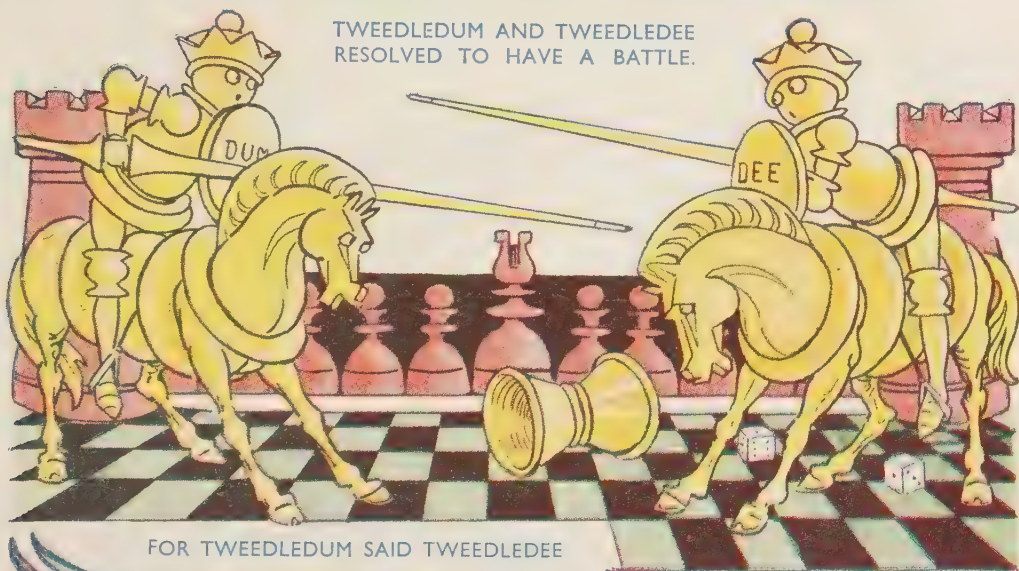
To market, to market, to buy a fat hog,
Home again, home again, Jiggety Jog.

THERE were two blackbirds sitting on a
hill,
The one named Jack, the other named
Jill.
Fly away, Jack! Fly away, Jill!
Come again, Jack! Come again, Jill!

FOUR-and-twenty tailors went to kill a
snail;
The best man amongst them durst not
touch her tail;
She put out her horns like a little Kyloe
cow;
Run, tailors, run, or she'll kill you all e'en
now!

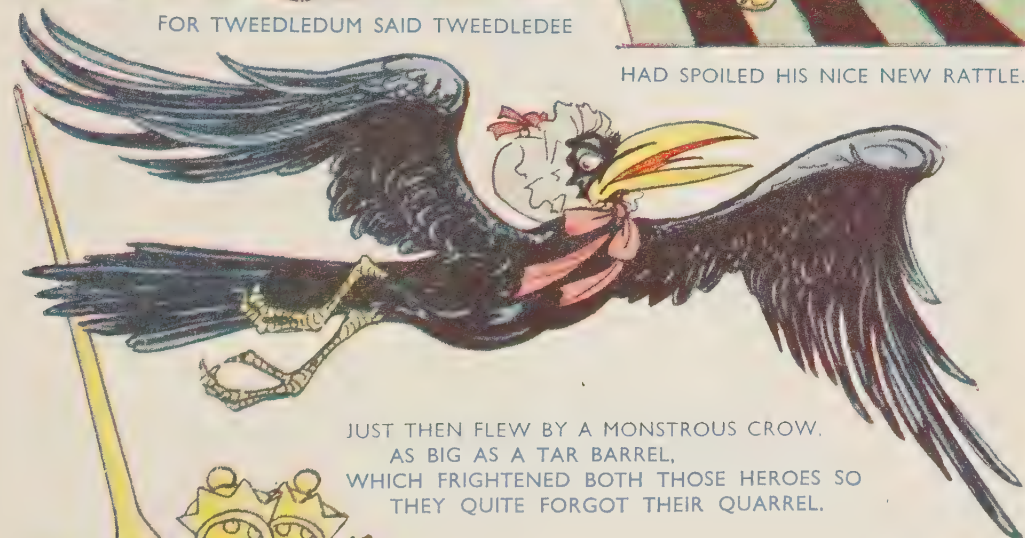
TWEEDLEDUM AND TWEEDLEDEE

TWEEDLEDUM AND TWEEDLEDEE
RESOLVED TO HAVE A BATTLE.

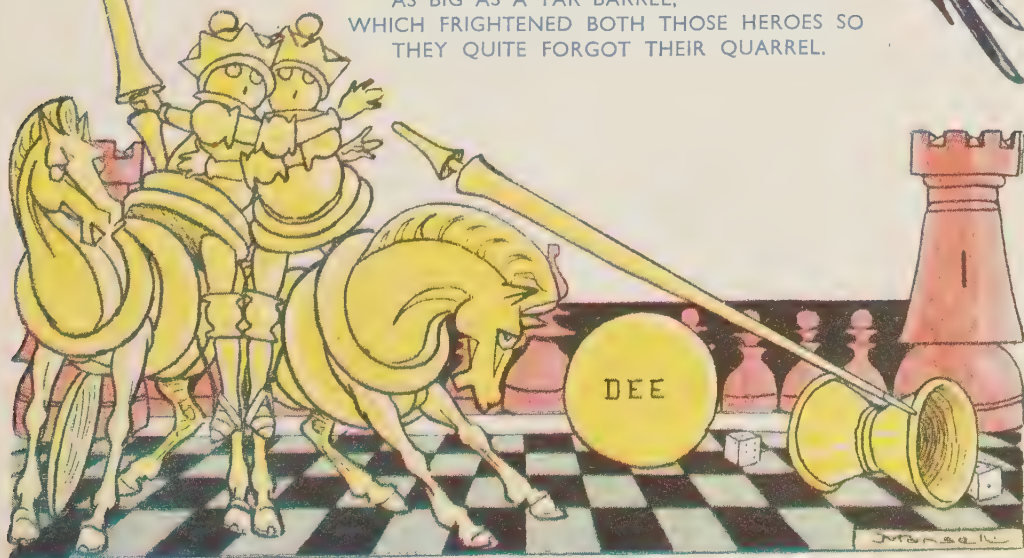


FOR TWEEDLEDUM SAID TWEEDLEDEE

HAD SPOILED HIS NICE NEW RATTLE.



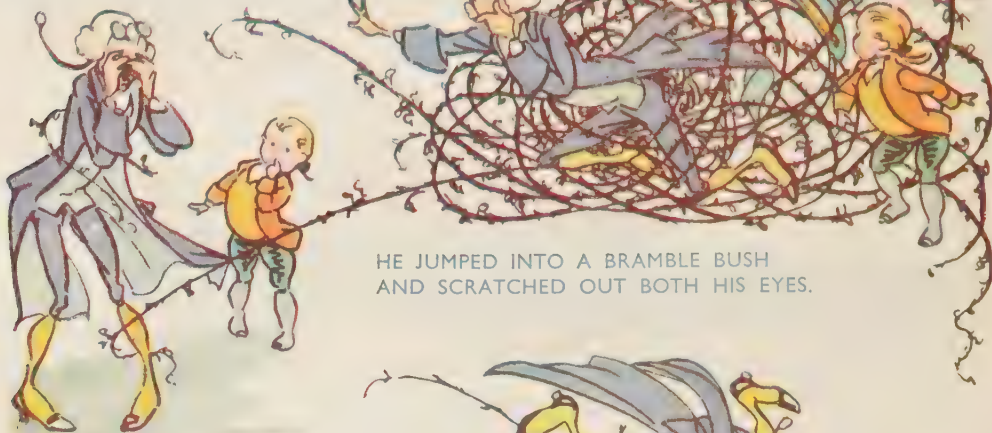
JUST THEN FLEW BY A MONSTROUS CROW,
AS BIG AS A TAR BARREL,
WHICH FRIGHTENED BOTH THOSE HEROES SO
THEY QUITE FORGOT THEIR QUARREL.



WONDROUS WISE

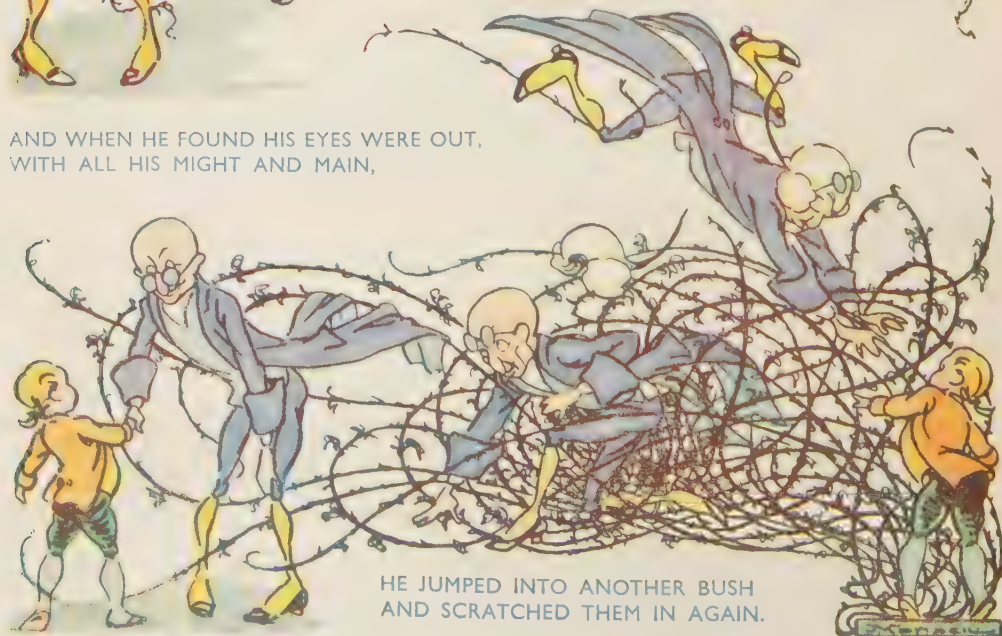


THERE WAS AN OLD MAN OF OUR TOWN
AND HE WAS WONDROUS WISE.



HE JUMPED INTO A BRAMBLE BUSH
AND SCRATCHED OUT BOTH HIS EYES.

AND WHEN HE FOUND HIS EYES WERE OUT,
WITH ALL HIS MIGHT AND MAIN,



HE JUMPED INTO ANOTHER BUSH
AND SCRATCHED THEM IN AGAIN.

THE LITTLE CROOKED MAN

THERE WAS A CROOKED MAN,

WHO WALKED A CROOKED MILE,

HE FOUND A CROOKED SIXPENCE

UPON A CROOKED STILE,

HE BOUGHT A CROOKED CAT

WHO CAUGHT A CROOKED MOUSE,

AND THEY ALL LIVED TOGETHER
IN A CROOKED LITTLE HOUSE.

RING OUT THE OLD, RING IN THE NEW



RING OUT, WILD BELLS, TO THE WILD SKY,
THE FLYING CLOUD, THE FROSTY LIGHT :
THE YEAR IS DYING IN THE NIGHT ;
RING OUT, WILD BELLS, AND LET HIM DIE

RING OUT THE OLD, RING IN THE NEW,
RING, HAPPY BELLS, ACROSS THE SNOW -
THE YEAR IS GOING, LET HIM GO ;
RING OUT THE FALSE, RING IN THE TRUE

Imperishable Thoughts of Men Enshrined in the Books of the World

Tennyson's Masterpiece

AS printed among Tennyson's works, *In Memoriam* is a long poem of one hundred and thirty-one sections, with a prologue and an epilogue. It is really a collection of short poems written on different occasions over a period of about sixteen years, dedicated to the memory of a dear friend of the poet, Arthur Henry Hallam, who was expected by all who knew him to become one of the most notable men of England, but who died suddenly at Vienna on September 15, 1833, and was brought back by sea and buried at Clevedon, on the Bristol Channel. Tennyson's grief at the loss of his friend was so intense that for many years it had a constant influence on the poet's life, turning his thoughts to the contemplation of man's destiny, and the effect of grief in purifying the mind of man.

IN MEMORIAM

STRONG Son of God, immortal Love,
Whom we, that have not seen thy
face,
By faith, and faith alone, embrace,
Believing where we cannot prove:

Thine are these orbs of light and shade;
Thou madest Life in man and brute;
Thou madest Death; and lo, thy foot
Is on the skull which thou hast made.

Thou wilt not leave us in the dust:
Thou madest man, he knows not why.
He thinks he was not made to die;
And thou hast made him: thou art just.

Thou seemest human and divine,
The highest, holiest manhood, thou:
Our wills are ours, we know not how;
Our wills are ours, to make them thine.

Our little systems have their day;
They have their day and cease to be:
They are but broken lights of thee,
And thou, O Lord, art more than they.

We have but faith: we cannot know;
For knowledge is of things we see;
And yet we trust it comes from thee,
A beam in darkness: let it grow.

Let knowledge grow from more to more,
But more of reverence in us dwell;
That mind and soul, according well,
May make one music as before

But vaster. We are fools and slight;
We mock thee when we do not fear:
But help thy foolish ones to bear:
Help thy vain worlds to bear thy light.

Forgive what seemed my sin in me;
What seemed my worth since I began;
For merit lives from man to man,
And not from man, O Lord, to thee.

Forgive my grief for one removed,
Thy creature, whom I found so fair.
I trust he lives in thee, and there
I find him worthier to be loved.

Forgive these wild and wandering cries,
Confusions of a wasted youth;
Forgive them where they fail in truth,
And in thy wisdom make me wise.

IN GRIEF'S FIRST HOUR

The poem begins with the above verses, dated 1849, and they strike at once a note of confident hope in the goodness and mercy of God. Overshadowed by the loss of his friend, he asks himself whether they will live again, and continue in another life the friendship of this. He has been studying works of philosophy, but from them he only comes to know that we cannot understand the inner mysteries of life, and must be content with faith. Yet he finds himself wandering sorrowfully in the street where his friend had lived.

DARK house, by which once more I stand
Here in the long, unlovely street,
Doors where my heart was used to beat
So quickly, waiting for a hand,

A hand that can be clasped no more—
Behold me, for I cannot sleep,
And like a guilty thing I creep
At earliest morning to the door.

He is not here; but far away
The noise of life begins again,
And ghastly through the drizzling rain
On the bald street breaks the blank day.

THE LAST JOURNEY

"Every pleasant spot" where the friends had been now seems dark, and despair has driven hope and faith away. The poet's soul has now begun to feel with a new keenness in his grief, but his thoughts are gentle when he contemplates the last journey of his friend over seas to the quiet waters of the River Severn in his native land.

FAIR ship, that from the Italian shore
Saillest the placid ocean-plains
With my lost Arthur's loved remains,
Spread thy full wings, and waft him o'er.

So draw him home to those that mourn
In vain; a favourable speed
Ruffle thy mirrored mast, and lead
Through prosperous floods his holy urn.

All night no ruder air perplex
Thy sliding keel, till Phosphor, bright
As our pure love, thro' early light
Shall glimmer on the dewy decks.

I hear the noise about thy keel;
I hear the bell struck in the night;
I see the cabin window bright;
I see the sailor at the wheel.

Thou bring'st the sailor to his wife,
And travelled men from foreign lands;
And letters unto trembling hands;
And, thy dark freight, a vanished life.

So bring him: we have idle dreams:
This look of quiet flatters thus
Our home-bred fancies: O to us,
The fools of habit, sweeter seems.

To rest beneath the clover sod,
That takes the sunshine and the rains.
Or where the kneeling hamlet drains
The chalice of the grapes of God;

Than if with thee the roaring wells
Should gulf him fathom-deep in brine;
And hands so often clasped in mine
Should toss with tangle and with shells.

IF THE LOST CAME BACK

"Is this the end of all my care?" the poet asks himself when the body of his friend has been hidden in the dark grave. In the depth of his grief his reason is not calm enough to answer him, and he can only resign himself to his sorrow and to what time may teach him. In these verses he expresses the commonest feelings of humankind, the difficulty at first of believing that a friend who has died will never meet us and speak to us again in this world.

If one should bring me this report,
That thou hadst touched the land to-day,
And I went down unto the quay,
And found thee lying in the port;

And standing, muffled round with woe,
Should see thy passengers in rank
Come stepping lightly down the plank
And beckoning unto those they know;

And if along with these should come
The man I held as half divine;
Should strike a sudden hand in mine,
And ask a thousand things of home;

And I should tell him all my pain,
And how my life had drooped of late,
And he should sorrow o'er my state
And marvel what possessed my brain;

And I perceived no touch of change,
No hint of death in all his frame,
But found him all in all the same,
I should not feel it to be strange.

NATURE'S SOOTHING INFLUENCE

"Calm despair and wild unrest" are now the two opposing feelings struggling within him, but when he comes again to the grave of his friend, the very gentleness of the natural scenes has a soothing influence on his spirit, and he writes:

THE Danube to the Severn gave
The darkened heart that beat no
more;

They laid him by the pleasant shore,
And in the hearing of the wave.

There twice a day the Severn fills;
The salt sea-water passes by,
And hushes half the babbling Wye,
And makes a silence in the hills.

The Wye is hushed nor moved along,
And hushed my deepest grief of all,
When filled with tears that cannot fall,
I brim with sorrow drowning song.

The tide flows down, the wave again
Is vocal in its wooded walls;
My deeper anguish also falls,
And I can speak a little then.

MEMORIES OF THE LOST FRIEND

His grief is still a purely personal emotion, and has not yet led him into the wider and deeper feelings which we call "universal," because they embrace mankind as a whole. It is still of their old remembered companionship he sings.

THE path by which we twain did go,
Which led by tracts that pleased us
well,

Through four sweet years arose and fell.
From flower to flower, from snow to snow:

And we with singing cheered the way,
And, crowned with all the season lent,
From April on to April went,
And glad at heart from May to May:

But where the path we walked began
To slant the fifth autumnal slope,

As we descended following Hope,
There sat the Shadow feared of man,

Who broke our fair companionship,
And spread his mantle dark and cold,
And wrapt thee formless in the fold,
And dulled the murmur on thy lip.

And bore thee where I could not see
Nor follow, though I walk in haste,
And think that, somewhere in the waste,
The Shadow sits and waits for me.

THE SACRIFICE OF LOVE

But in the presence of this "Shadow cloaked from head to foot," which is, of course, Death, "who keeps the keys of all the creeds," the poet begins to ponder over the great mysteries of man's life and destiny. His thoughts of life, however, are always involved with memories of his friend.

I KNOW that this was Life—the track
Whereon with equal feet we fared;
And then, as now, the day prepared
The daily burden for the back.

But this it was that made me move
As light as carrier-birds in air;
I loved the weight I had to bear,
Because it needed help of Love:

Nor could I weary, heart or limb,
When mighty Love would cleave in
twain
The lading of a single pain,
And part it, giving half to him.

THE LESSONS OF LIFE

From his personal feelings he now begins to draw the real lessons of life, and as the wildness of despair gives place at length to more reasonable and calmer thoughts, he is able to contemplate his loss with calmness and resignation.

I ENVY not in any moods
The captive void of noble rage,
The linnet born within the cage,
That never knew the summer's woods:

I envy not the beast that takes
His license in the field of time,
Unfettered by the sense of crime,
To whom a conscience never wakes;

Nor, what may count itself as blest,
The heart that never plighted troth
But stagnates in the weeds of sloth;
Nor any want-begotten rest.

I hold it true, whate'er befall,
I feel it when I sorrow most;
'Tis better to have loved and lost
Than never to have loved at all.

THE MESSAGE OF THE BELLS

Then, with the approach of Christmastide, and all its holy memories, he finds his very sorrow touched with joy. New feelings of hope, and a serene happiness, born of his rising faith in God's Mercy, now dwell in that breast where so recently the wildness of sorrow and despair had reigned.

THE time draws near the birth of Christ:
The moon is hid; the night is still;
The Christmas bells from hill to hill
Answer each other in the mist.

Four voices of four hamlets round,
From far and near, on mead and moor,
Swell out and fail, as if a door
Were shut between me and the sound:

Each voice four changes on the wind,
That now dilate, and now decrease,
Peace and goodwill, goodwill and peace.
Peace and goodwill, to all mankind.

This year I slept and woke with pain,
I almost wished no more to wake,
And that my hold on life would break
Before I heard those bells again;

But they my troubled spirit rule,
For they controlled me when a boy;
They bring me sorrow touched with
joy,
The merry merry bells of Yule.

THE POET'S FAITH AND DOUBT

His faith in the promises of God, as revealed to us in the teachings of Jesus, is not yet absolute, and his mind is not without its doubts, but he has emerged from his darkest sorrow with the conviction that the grave is not the end.

MY own dim life should teach me this,
That life shall live for evermore,
Else Earth is darkness at the core,
And dust and ashes all that is;

What then were God to such as I ?
'Twere hardly worth my while to choose
Of things all mortal, or to use
A little patience ere I die;

'Twere best at once to sink to peace,
Like birds the charming serpent draws.
To drop head-foremost in the jaws
Of vacant darkness and to cease.

DO THE DEPARTED THINK OF US ?

It is springtime again, and the poet still is singing his mournful songs in memory of his friend. For the first time we find him wondering whether the spirit of the departed takes any interest in the life on Earth, and, if so, he cannot but think these songs of his will be grateful to the spirit's ear.

No joy the blowing season gives,
The herald melodies of spring,
But in the songs I love to sing
A doubtful gleam of solace lives.

If any care for what is here
 Survive in spirits rendered free,
 Then are these songs I sing of thee
 Not all ungrateful to thine ear.

THE PURPOSE OF ALL LIFE

From this thought he goes on to speculate upon the life of the departed. "How fares it with the happy dead?" he asks, and suggests that theirs is indeed the larger life, to which all the joys and sorrows and good and evil of this world we live in are but the dim and bungling preparations.

OH, yet we trust that somehow good
 Will be the final goal of ill,
 To pangs of nature, sins of will,
 Defects of doubt, and taints of blood;

That nothing walks with aimless feet;
 That not one life shall be destroyed,
 Or cast as rubbish to the void,
 When God hath made the pile complete;

That not a worm is cloven in vain;
 That not a moth with vain desire
 Is shrivelled in a fruitless fire,
 Or but subserves another's gain.

Behold, we know not anything;
 I can but trust that good shall fall
 At last—far off—at last, to all,
 And every winter change to spring.

Dost thou look back on what hath been,
 As some divinely gifted man,
 Whose life in low estate began
 And on a simple village green;

Who breaks his birth's invidious bar,
 And grasps the skirts of happy chance,
 And breasts the blows of circumstance,
 And grapples with his evil star;

And moving up from high to higher,
 Becomes on Fortune's crowning slope
 The pillar of a people's hope,
 The centre of a world's desire;

Yet feels, as in a pensive dream,
 When all his active powers are still:
 A distant dearness in the hill,
 A secret sweetness in the stream,

The limit of his narrower fate,
 While yet beside its vocal springs
 He played at counsellors and kings,
 With one that was his earliest mate;

Who ploughs with pain his native lea
 And reaps the labour of his hands,
 Or in the furrow musing stands;
 "Does my old friend remember me?"

WHEN GRIEF IS PAST

This, then, is the wide and universal hope that has grown within the soul of the poet, as he has turned from his own personal sorrows to contemplate the sorrows of all mankind, and to look with clearer faith upon the work of God. He has no longer any doubt that God has created man not as the mere creature of a passing day, but as an inheritor of immortal life. He begins also to feel half ashamed of his grief, saying that "The song of woe is, after all, an earthly song," and in the larger love of mankind, which Jesus came to teach, he finds the joy that far outweighs the loss of a friend. Another year has passed; it is Christmas once more.

AGAIN at Christmas did we weave
 The holly round the Christmas
 hearth;
 The silent snow possessed the earth,
 And calmly fell our Christmas-eve:

The Yule-clog sparkled keen with frost,
 No wing of wind the region swept,
 But over all things brooding slept
 The quiet sense of something lost.

As in the winters left behind,
 Again our ancient games had place,
 The mimic picture's breathing grace,
 And dance and song and hoodman-blind.

Who showed a token of distress?
 No single tear, no mark of pain:
 O sorrow, then can sorrow wane?
 O grief, can grief be changed to less?

O last regret, regret can die!
 No—mixt with all this mystic frame,
 Her deep relations are the same,
 But with long use her tears are dry.

THE COMING OF SPRING

The poet is thus uneasy at the thought that his sorrow for his friend has lessened. It is personal feeling again pushing against the wider love of humanity, and in the following beautiful song of spring he calls upon the warmer season of the year to thaw his 'frozen sorrow and let it flower again.

Down upon the northern shore,
 O sweet new year delaying long;
 Thou doest expectant Nature wrong;
 Delaying long, delay no more.

What stays thee from the clouded noons,
 Thy sweetness from its proper place?
 Can trouble live with April days,
 Or sadness in the summer moons?

Bring orchis, bring the foxglove spire,
 The little speedwell's darling blue,
 Deep tulips dashed with fiery dew,
 Laburnums, dropping-wells of fire.

O thou, new year, delaying long,
 Delayest the sorrow in my blood,
 That longs to burst a frozen bud
 And flood a fresher throat with song.

WHAT MIGHT HAVE BEEN

His mind is back again entirely with his friend, when he sings thus of what might have been had the lost one lived to marry the poet's sister, to whom he had been engaged.

WHEN I contemplate all alone
 The life that had been thine below,
 And fix my thoughts on all the glow
 To which thy crescent would have grown.

I see thee sitting crowned with good,
 A central warmth, diffusing bliss
 In glance and smile, and clasp and kiss,
 On all the branches of thy blood;

Thy blood, my friend, and partly mine;
 For now the day was drawing on
 When thou shouldst link thy life with one
 Of mine own house, and boys of thine

Had babbled "Uncle" on my knee;
 But that remorseless iron hour
 Made cypress of her orange flower,
 Despair of Hope, and earth of thee.

I seem to meet their least desire,
 To clap their cheeks, to call them mine,
 I see their unborn faces shine
 Beside the never-lighted fire.

I see myself an honoured guest,
 Thy partner in the flowery walk
 Of letters, genial table-talk,
 Or deep dispute, and graceful jest;

While now thy prosperous labour fills
 The lips of men with honest praise,
 And sun by sun the happy days
 Descend below the golden hills

With promise of a morn as fair;
 And all the train of bounteous hours
 Conduct by paths of growing powers,
 To reverence and the silver hair;

Till slowly worn her earthly robe,
 Her lavish mission richly wrought,
 Leaving great legacies of thought,
 Thy spirit should fail from off the globe;

What time mine own might also flee,
 As linked with thine in love and fate,
 And, hovering o'er the dolorous strait
 To the other shore, involved in thee,

Arrive at last the blessed goal,
 And He that died in Holy Land
 Would reach us out the shining hand,
 And take us as a single soul.

What reed was that on which I leant ?
 Ah, backward fancy, wherefore wake
 The old bitterness again, and break
 The low beginnings of content.

FAMILIAR SCENES REVISITED

For a time the thoughts of the poet are again entirely with the departed; then comes a visit to Cambridge, where they had been at college together, but the sense of personal loss is no longer felt, the gloom has lifted from the poet's mind.

I PASSED beside the reverend walls
 In which of old I wore the gown;
 I roved at random through the town,
 And saw the tumult of the halls;

And heard once more in college fanes
 The storm their high-built organs make,
 And thunder-music, rolling, shake
 The prophets blazoned on the panes;

And caught once more the distant shout,
 The measured pulse of racing oars
 Among the willows; paced the shores
 And many a bridge, and all about

The same grey flats again, and felt
 The same, but not the same; and last
 Up that long walk of limes I passed
 To see the rooms in which he dwelt.

Another name was on the door:
 I lingered; all within was noise
 Of songs, and clapping hands, and boys
 That crashed the glass and beat the floor;

Where once we held debate, a band
 Of youthful friends, on mind and art,
 And labour, and the changing mart,
 And all the framework of the land;

When one would aim an arrow fair,
 But send it slackly from the string;
 And one would pierce an outer ring,
 And one an inner, here and there;

And last the master-bowman, he,
 Would cleave the mark. A willing ear
 We lent him. Who but hung to hear
 The rapt oration flowing free

From point to point, with power and grace
 And music in the bounds of law,
 To those conclusions when we saw
 The God within him light his face,

And seem to lift the form, and glow
 In azure orbits heavenly-wise;
 And over those ethereal eyes
 The bar of Michael Angelo.

RING OUT WILD BELLS

Through many sections of the poem the writer recalls events in his friendship with his lost companion, but there is always a feeling of joy now in his expressions of grief, no wavering note of doubt when he sings of the greater things of life and immortality; until at last a Christmas comes that finds him calm in mind and strong in faith, and in a great song of triumph the poem reaches its climax.

RING out, wild bells, to the wild sky,
 The flying cloud, the frosty light;
 The year is dying in the night;
 Ring out, wild bells, and let him die.

Ring out the old, ring in the new,
 Ring, happy bells, across the snow:
 The year is going, let him go;
 Ring out the false, ring in the true.

Ring out the grief that saps the mind,
 For those that here we see no more;
 Ring out the feud of rich and poor,
 Ring in redress to all mankind.

Ring out a slowly dying cause,
 And ancient forms of party strife;
 Ring in the nobler modes of life,
 With sweeter manners, purer laws.

Ring out the want, the care, the sin,
 The faithless coldness of the times;
 Ring out, ring out my mournful rhymes,
 But ring the fuller minstrel in.

Ring out old shapes of foul disease;
 Ring out the narrowing lust of gold;
 Ring out the thousand wars of old,
 Ring in the thousand years of peace.

Ring in the valiant man and free,
 The larger heart, the kindlier hand;
 Ring out the darkness of the land,
 Ring in the Christ that is to be.

JOY COMES WITH SPRING

The poet's new mood is reflected, as spring follows the winter cold, in the lovely sights and sounds with which Nature renews the beauty of the Earth

NOW fades the last long streak of snow,
 Now burgeons every maze of quick
 About the flowering squares, and thick
 By ashen roots the violets blow.

Now rings the woodland loud and long,
 The distance takes a lovelier hue,
 And drowned in yonder living blue
 The lark becomes a sightless song.

Now dance the lights on lawn and lea,
 The flocks are whiter down the vale,
 And milkier every milky sail
 On winding stream or distant sea ;

Where now the seamew pipes, or dives
 In yonder greening gleam, and fly
 The happy birds, that change their sky
 To build and brood; that live their lives

From land to land; and in my breast
 Spring wakens too; and my regret
 Becomes an April violet,
 And buds and blossoms like the rest.

WHAT TIME HAS TAUGHT THE POET

So at last the poet's personal grief has passed; "been lived down," as we say. Time has indeed taught him wisdom, and he is wise in the confident hope that far better than unavailing sorrow for the dead is the steady faith in the reunion of friends in after life, "some strong bond which is to be."

IS it, then, regret for buried time
 That keenlier in sweet April wakes,
 And meets the year, and gives and takes
 The colours of the crescent prime?

Not all: the songs, the stirring air,
 The life re-orient out of dust,
 Cry through the sense to hearten trust
 In that which made the world so fair.

Not all regret; the face will shine
 Upon me while I muse alone;
 And that dear voice I once have known
 Still speak to me of me and mine:

Yet less of sorrow lives in me
 For days of happy commune dead;
 Less yearning for the friendship fled
 Than some strong bond which is to be.

THAT ONE DIVINE EVENT

The last thoughts of the poet, freed from all contemplation of his own feelings, are with mankind as a whole, and in his vision he sees the ultimate triumph of life over death, of good over evil. Man is no mere animal, but capable of love and suffering and hope, and these are but the seeds of what will flower and bear fruit in the after life of the soul. Nature, the poet says, is like an open book.

NO longer half-akin to brute,
 For all we thought and loved and did,
 And hoped, and suffered, is but seed
 Of what in them is flower and fruit.

Whereof the man, that with me trod
 This planet, was a noble type
 Appearing ere the times were ripe,
 That friend of mine who lives in God,

That God, which ever lives and loves,
 One God, one law, one element,
 And one far-off divine event,
 To which the whole creation moves.

The Story of the Most Beautiful Book in the World

The Growth of Christianity

WE have finished our survey of the Bible stories. Their continuation is to be found in the story of Christianity to which the Bible led. The Bible was finished over eighteen centuries ago. The Christianity that grew out of it, and still finds its inspiration in it, goes on, and will go on, with a development like that which can be traced throughout the Bible. Here we shall follow, in outline, the changeful growth of the Christianity that at last will complete the reconciliation of humanity with God which the Bible began. Religion entered upon an entirely new stage when Jesus left to His disciples the spreading throughout the world of his Divine revelation.

THE WINNING OF THE WORLD

THE rapid spread of Christianity, after the earthly presence of the Master was withdrawn, dwarfs all recorded miracles. Failure could not seem more complete than when Jesus, rejected by the priests of his own race, was denounced by them to the Roman Government of Judea as a dangerous revolutionist, crucified as a criminal, and his few inconspicuous disciples all forsook Him and fled. To human wisdom that seemed the end—the disgraceful end—of the Galilean carpenter who had been felt to be a marvellous teacher by crowds of simple countrymen.

Against any revival of the excitement caused by His powers of healing, His compelling personality, His tender teaching, and His shining purity, were the resentment of the closely-organised Jewish priesthood, the paganism of the non-Jewish elements in the population, and the mighty Government of the Roman Empire which, with a kind of lofty contempt, always supported organised local opinion in its distant provinces. And yet, before the generation to which Jesus had belonged had passed away, the gentle religion of the meek and pure in heart, that saw God as a Heavenly Father and all men as brethren, had spread over western Asia, penetrated to Athens, the home of philosophy in Greece, and was permeating silently the imperial city of Rome itself.

The western world, made bankrupt of spirituality by the trivialities and superstitions of outworn paganism, was waiting in expectancy for a Messiah, a deliverer,

with a new faith that would satisfy the loftiest hopes of humanity; and, as the story of Him who brought life and immortality to light passed from land to land, the finest souls in every race that heard the good news felt that in very truth a Messiah had come.

The complete destruction of Jerusalem, and the shattering of the priestly system of the Jews by the army of Titus, had some effect, no doubt, on the most religious race in the world. No longer could it be hoped by Jews that the Chosen People would ever attain to an earthly kingship. The long cherished belief in a conquering Messiah perished. Rome ruled the world. A spiritual sway was the only possibility left. The Master's teaching that the Kingdom of God is within the hearts of men appealed alike to disillusioned Jews and to the many races who bowed the knee, in temporal affairs, to the all-embracing might of Rome. The thoughts of men widened to something like the breadth of the Master's own outlook and reached to the Eternal Beyond. It was the immortal Christ who conquered the imagination of a generation that had well-nigh lost hope.

For a time the disciples held firmly the belief that Jesus would quickly return and visibly inaugurate a new era. Even Paul, the greatest of all the preachers of the Christian faith, held this view; but, as we can see in his letters, if we understand when each of them was written, he began to realise that Christ's kingdom was

GREAT FIGURES OF THE OLD TESTAMENT · THE LIFE OF JESUS

to be in the hearts of men till the whole world had been reached by His Gospel. And this spiritual aspect of Christianity, as bringing men into a right relationship to God through succeeding ages, was at last accepted by nearly all Christians.

THE GREAT WAVE OF ENTHUSIASM WHICH WOULD NOT BE STAMPED OUT

No doubt the early mistake of a swift triumphant reappearance of Christ had a great effect in making the first Christians earnest and faithful; but the most real cause of the marvellous spread of the new faith, for centuries after Jesus finished His earthly life, was a passionate devotion aroused by the truth and loveliness of the revelation He had made to mankind, and a feeling of the difference He had made to the world by the glorious outlook He had disclosed. His spirit thrilled men to a sublime enthusiasm that knew no fear.

And, indeed, there was need for such an enthusiasm, for persecution soon did its worst to stamp out the swiftly spreading faith. The Roman Empire, which dominated the world almost as far as India by force of arms, demanded that its august Emperors should be acknowledged as divine, according to the old pagan ideas, and, of course, Christians could not make any such acknowledgment. They were willing to render to Caesar the things which were Caesar's, but not to render to him the adoration that was God's. So from time to time the Emperor tried to abolish Christianity altogether by making life intolerable for followers of Christ.

HOW CHRISTIANITY GREW UP ROUND TWO GREAT CENTRES IN EUROPE

If a Roman nobleman was a Christian he was degraded from his rank, and not allowed to hold any honourable office. If he was one of the people he was deprived of citizenship, and insults and cruelties were heaped upon him without any hope of redress. If he was a slave he must remain a slave for life. Christians were not allowed to assemble together for worship. Their churches were destroyed; their books were burned, and they were themselves tortured and martyred. These sufferings were borne with patience; death was met with exaltation, for to them it meant "being with Christ, which is far better." Men who had known little of Christianity before, or had been deceived by false accounts of it, wondered at such heroism, admired it, tried to find out the

secret of it, and Christianity flourished more and more.

In less than 300 years after the Crucifixion the position had altered so greatly that the Emperor Constantine formally granted toleration to Christians. He moved his capital to Byzantium, which is now called Constantinople, and round the city Christianity organised itself in eastern Europe as the Greek Orthodox Church; while the Christianity of western Europe, centring on Rome, became the Roman Catholic Church and claimed the headship of the faith for the bishop of Rome as the successor of St. Peter, under the name of the Pope, or Holy Father, of Christendom. Gradually the Roman Empire ceased to exist as a Power dominating the world, and the closely organised Christian Church of the West became the most far-reaching and uniting influence. While the Roman Empire was shrinking, the Church which had made Rome its capital was expanding beyond what had been regarded as the borders of civilisation, and in course of time it became the religion favoured by the temporal Government.

THE FOUNDING OF THE FIRST CHURCHES OF THE EARLY CHRISTIANS

Warlike races who knew nothing of either Christianity or the fanciful poetical religions of Greece and Rome were pressing from the north and east on the nations that lived around the northern Mediterranean shore. As they gradually crushed the Roman Empire they were met by something stronger than the imperial legions. They were themselves conquered by the gentle religion of Christ.

By the time the Christian religion had established itself firmly everywhere around the great sea of southern Europe, and in the Near East its method of worship and expansion had greatly changed. The early disciples went forth from place to place in the simplest manner, preferably in pairs, and sometimes, like Paul, earned their own living on their journeys. As the Christians grew in numbers they organised churches and took the Jewish synagogues as their first models. During periods of persecution they met in secrecy. But later, as security was attained, they felt that the arts of architecture and painting might fitly be used to give dignity to their adoration of the Almighty; and many devout men separated themselves from the ordinary work of the world and

THE LITTLE POOR MAN OF ASSISI



FRANCIS OF ASSISI, LOVING THE LITTLE BIRDS AS HIS BROTHERS AND SISTERS, BROUGHT THE SELFLESSNESS OF JESUS INTO HIS AGE

pledged themselves to a holy life, while as missionaries they spread the faith throughout the heathen lands by which the Roman Empire was surrounded.

The separation of Christian people into those who, on the one hand, tilled the soil, or traded by land and sea, or engaged in useful industries, or served as soldiers under kings or nobles, and, on the other hand, those who made religion their principal concern by being church dignitaries, or parish priests, or monks in monasteries, or wandering friars, constituted the most vital division of human society in those days.

A GREAT BODY WITH A POWER MIGHTIER THAN KINGS

The Church became rich and powerful, owner of large estates, and with vast influence apart from its religious duties. The clergy were almost the only people who had the leisure and means for acquiring the knowledge contained in books, and that added to their power. So, instead of Christians being a scattered body of loyal followers of Christ, they were compactly formed into a mighty Institution more powerful than the greatest of kings. It was, however, very earnest in spreading the Gospel everywhere, as we may see by studying how it Christianised the British Islands at an early date.

When did Christianity first reach our country? No one knows exactly, but it seems probable that in less than fifty years after Christ was crucified outside Jerusalem Roman soldiers brought the Christian faith to this distant island in the northern seas.

HOW CHRISTIANITY CAME TO BRITAIN FIFTY YEARS AFTER CALVARY

About thirty years after the Crucifixion, Paul, who had been preaching throughout Palestine, Asia Minor, and Greece for a quarter of a century, was brought a prisoner to Rome, where he continued his work in captivity, till his martyrdom, probably in A.D. 62. We know that his teaching had appealed to the Roman soldiery. Between A.D. 70 and A.D. 80 Julius Agricola came twice to Britain to complete the conquest of the country. First he came as a general and then as governor, and, after putting down rebellions, he made Roman influence permanent by establishing towns here and there. Among the towns apparently founded at this time was Silchester, on

the main road from London to the west, and excavations of the foundations of this early Roman settlement suggest that it had a Christian church.

If this reading of the ruins of Silchester be true, it is evident that less than fifty years after Paul had finished his course, having kept the faith, the seeds of Christianity were sown in Britain. No doubt they were supplemented by the work of missionaries from Gaul, where Christianity quickly became rooted.

That the British who lived for three hundred and fifty years under Roman rule were in a large degree Christian is proved abundantly. Before Constantine, who was first proclaimed Roman Emperor at York, adopted Christianity as the Imperial religion, and before he founded Constantinople as a Christian capital, the Christians of Britain were so well organised that they sent three bishops to represent them at a great council at Arles, in the south of France, in 314.

HOW BRITAIN CAME TO BE BLOTTED OUT* OF THE RECORDS OF THE CHURCH

St. Patrick, the patron saint of Ireland, was a Briton who went there as a missionary. A Briton began missionary work among the Picts. Pelagius, a religious thinker whose views raised arguments among Christians throughout the world, was a Briton. All the traditions of the legendary British King Arthur picture him as a Christian prince in a Christian land, fighting bravely against the incursions of heathen from over the sea. It is clear that when the Romans left Britain they left Christianity in all its more civilised parts, in close touch with the great Church organised from Rome.

Yet, a hundred and fifty years later, when Pope Gregory saw slaves from England in the Roman streets, he gazed on them with strange eyes, and only saw in them handsome heathens of an unknown race. The land was blotted out of the records of the Church. It had to be re-missioned.

No wonder we have little knowledge of the story of our land under the Romans, except from Roman books written at a distance, and the slender records dug out of the ruins of a world overthrown. Our fierce English forefathers, in ruthless hordes, obliterated the religion, social life, language, the very existence of the Britons of the fertile lowlands, and established heathenism in new forms.

A hundred years of oblivion followed, tempered only by the dim faith which survived in the mountainous borderlands of Wales and in Devon and Cornwall. The very alphabet in which records were made was changed. The Britons had accepted Latin as the language of learning. The English brought with them their rude Runic alphabet, which even yet we can only interpret doubtfully. The overthrow was complete. Christianity was uprooted.

THE CHURCH'S GOOD WORKS GIVE IT A FRESH HOLD ON THE PEOPLE

It is usual to say that the second Christianising of England came through Gregory sending Augustine and a body of monks from Rome into Kent in 597, when Ethelbert, the chief English king of his day, was converted, but this is only partly true. The re-missioning of Britain had begun thirty years before the arrival of Augustine. Ireland, Christianised from Britain, repaid the debt by sending Columba and his successors to the islands of Scotland, the lowlands, and the north of England. As soon as the heathen conquerors settled down and ceased to be plundering rovers, the monks of Iona approached them from islands in the west, where they had founded lonely retreats for prayer and a religious life. Thus England was Christianised afresh by simultaneous advances from north and south. The methods used were different. The southern missionaries were organisers and politicians and worked through the Courts of kings; the northern missionaries relied on the quiet influence of good lives, and their work though less rapid was more sure.

A time came when the two movements merged into one; but a sign of the existence of two movements remains to this day in the fact that there is an Archbishop of York as well as an Archbishop of Canterbury.

HOW THE SOUTH HELD THE FORT FOR CHRISTIANITY IN BRITAIN

As the men of English race became more settled, and passed more fully under the influence of Christianity the Church gained a fresh hold on the people by being the repository of learning, the centre of all education, the reliever of the poor, and the protector of the oppressed. In this work the Church movement in the north distinguished itself,

producing the fine scholars Bede and Alcuin. It became known through Europe for its learning and missionary zeal.

Then came the second heathen invasion. New hordes of Northmen ravaged every coast. Their fury, directed most fiercely against churches and monasteries, fell disastrously on the north. Northumbria and central England were swamped by the Danish hosts. The overthrow was not so complete as the overthrow of Celtic Christianity had been, for the whole kingdom was never engulfed at one time, and these later invaders were more nearly akin to the English than the English had been to the Britons, and so were more susceptible to absorption. But religion and learning went down for the time being in the north, and this time it was the south that held the fort for Christianity, and achieved a second revival of learning, and a gradual re-expansion of the Christian faith.

Not, however, till the story of these fluctuations in British Christianity had filled nine hundred years was it finally established beyond peril. Surely a country that has been Christianised at such a cost ought never to flag in its efforts to pass on its faith to less fortunate lands.

THE BEAUTIFUL AND USEFUL LIFE OF POPE GREGORY THE GREAT

We have mentioned the names of Pope Gregory, Bede, and Alcuin as notable in the early religious history of Great Britain. Pope Gregory the First bears in history the name of the Great, and right well he deserves it. He was a Roman noble who might easily have become one of the greatest officers of the Roman Empire; but he chose rather the life of prayer and of service to God, with no thought of his own honour, yet, out of his self-denial the highest honour came to him unsought. Gregory's wisdom and goodness won him such love in Rome that when Pope Pelagius died all men said no other man should be pope but Gregory, and though he strove hard to be excused, no other man would they have. He wished to come himself to Britain as a missionary, but the rulers of the Church would not allow him to leave Rome, where he was much needed. It was Gregory who gave the Church the fine, stately chants that are called Gregorian.

The life of Bede was a beautiful one, spent far from the din of the battlefield,

the bargaining of the market, and the pleasures of the Court.

All his days were passed, though he was the greatest scholar and teacher of Anglo-Saxon times, in the peaceful monasteries at Wearmouth and at Jarrow. There he studied, wrote, and taught the six hundred youths who gathered round him. For them he wrote text-books covering the then known field of knowledge; for them, and for the people, he wrote a history of the English Church, telling how Christianity was brought into the country.

So earnest and noble-minded a scholar could not bear to think that the greatest book ever written should remain a sealed book to every person unable to read Latin; and he was determined, if God gave him strength to do it, to translate at least the Gospel of St. John into Anglo-Saxon, that all might hear and understand it in their own tongue. Forty-four works, mostly in Latin, he had written during his busy life of teaching; one more, the Gospel of Love, he would leave behind him. He was getting ill and feeble, but he would not leave even to the ablest pupil a work so important as the translation of the Gospel. "I will not have my boys read a lie," he declared, "nor labour fruitlessly after my death."

THE LAST DAYS OF THE BEAUTIFUL LIFE OF THE VENERABLE BEDE

Day by day Bede grew weaker; but, refusing to rest, he continued cheerfully, dictating to his scribe. One of his scholars, Cuthbert, wrote a description of the last hours of his revered master, and an artist has painted a beautiful picture of the old man on his couch in his little cell, with a youth before him eagerly taking down his words.

In his *History of the English People*, John Richard Green thus describes the scene:

The dawn broke on another sleepless night, and again the old man called his scholars round him and bade them write.

"There is still a chapter wanting," said the scribe as the morning drew on, "and it is hard for thee to question thyself any longer."

"It is easy done," said Bede. "Take thy pen, and write quickly."

Amid tears and farewells the day wore on to eventide.

"There is yet one sentence unwritten, dear master," said the boy.

"Write it quickly," said the dying man.

"It's finished now," said the little scribe at last.

"You speak truth," said the master. "All is finished now."

Placed upon the pavement, his head supported in his scholars' arms, his face turned to the spot where he was wont to pray, Bede chanted the solemn "Glory to God." As his voice reached the close he passed quietly away.

THE GREAT SCHOLAR WHO CARRIED ON THE WORK OF BEDE

Alcuin, who was born in 735, the year when Bede died so gloriously, was the great scholar who carried on in the north of England the educational work of Bede, and then accepted the invitation of the Emperor Charlemagne to go to the Frankish Court at Aix-la-Chapelle; and there, and later at Tours, established a school of Continental education, which survived when the storm of Danish barbarism had swept away the culture of Yorkshire and Durham.

There were other remarkable men who were connected with the Church in England in early times, and by their actions and disputes showed what was going on in other countries also, as questions of power and privilege arose between the rulers of the Church and the rulers of the different States. One, Bishop Dunstan, who was born in 925, was the real ruler of England for many years. He made numerous changes, increasing the power of the clergy, and setting them apart from the rest of the people. One of his rules was that they should not marry.

A very good thing he did was to give protection to slaves, and to teach their owners that it was good to set them free. For in those days there were many slaves in England, and the law suffered their masters to kill them, and laid but light penalties on anyone who slew a slave.

DUNSTAN, THE GOOD FRIEND OF THE SLAVES OF ENGLAND

Dunstan taught men that slaves are quite as good as other men in God's sight, and that the priests could not pronounce the words of pardon for wrong done to a slave unless the wrongdoer repented of his sin and did penance for it as much as if he had wronged a free man.

When William the Conqueror made himself King of England, nearly a hundred years later, he was ill-pleased with the state of the Church, for the clergy had gone back from the strict ruling of Dunstan; and he brought over, to be Archbishop of Canterbury, an Italian who had been the

head of the Abbey of Bec, in Normandy. His name was Lanfranc. William wished to have the Church to help him in keeping the Norman barons from becoming too powerful and troublesome, and he knew that Lanfranc would assist him.

To this end Lanfranc persuaded William to increase the power and wealth of the Church, and to separate the clergy from the laity even more than Dunstan had tried to do. Therefore, in the bishoprics and at the head of the great monasteries, called abbeys or priories, he set, whenever it was possible, not Englishmen, but foreigners who lived by the stricter rule.

Lanfranc put an end to the practice of the clergy marrying, and he arranged with the king that from this time the clergy should not be subject to the ordinary laws of the land in their private doings, but only to the law of the Church, and should be judged only by courts made up of clergy; and that, moreover, if there were disputes between clergy and laity, these Church courts should judge.

LANFRANC PERSUADES WILLIAM TO BUILD UP THE POWER OF THE CHURCH

Soon after William Rufus succeeded William the Conqueror, Lanfranc died, and the new king not only neglected to appoint a new archbishop, but seized for himself the money which the archbishop should have had for the Church. Yet when William fell sick and thought he was about to die, he feared for his soul because he had robbed the Church, and so he appointed a new archbishop. Yet he fancied he could save his soul if he died, and continue in his evil courses if he lived, if he chose for archbishop someone whom he could frighten into working his own will; and so he would have a certain very gentle and pious scholar named Anselm, another Italian, who was now Abbot of Bec as Lanfranc had been. Anselm soon showed William how he had misjudged his gentleness. The great Anselm was a very lion for boldness in the cause of justice and righteousness, and would in no wise obey the king's behests when they were evil, as they commonly were. Nor would he suffer William to rob the Church or to set up bishops and abbots who would do his bidding and pay him great sums of money.

The strife between them became so hot that Anselm had to leave England. When the Red King was dead, and the wise King Henry the First reigned in his stead,

Anselm came back to England, and made agreement with the king readily that the bishops and abbots should do the king homage for their lands as the barons did, but should be appointed according to the rules of the Church, and not according to the will and pleasure of a king whose intent might be evil.

THE QUARREL BETWEEN CHURCH AND STATE THAT WENT ON FOR YEARS

This quarrel between the king and the archbishop was a part of a great quarrel between Church and State which had been going on for many years. There had been at Rome a monk named Hildebrand, who had been the chief adviser of more than one of the popes, and then himself became Pope Gregory the Seventh. Gregory held that it was the will of God to rule the world through two powers—the temporal power, which means the emperors and kings of the different countries, and the spiritual power, which means the Church ruled over by the Pope. Of these two powers he accounted the spiritual power the greater, and so it seemed to him that the reign of God upon Earth would be made manifest only when emperors and kings humbled themselves before the Pope. This he believed all the more because he knew that he himself loved righteousness and hated iniquity, whereas the emperors and kings sought their own advantage more than the glory of God.

THE PENITENT EMPEROR WHO STOOD IN THE SNOW FOR THREE DAYS

Accordingly Pope Gregory would have the Church set wholly free from the rule of emperors and kings. But these were in no wise ready to believe that the bidding of popes and bishops was in very truth the sound of the voice of God; they would have all men in their realms obey them, priests as well as laymen. So there was deadly strife between Pope Gregory and the Emperor Henry the Fourth of Germany.

Seeing that those who wished ill to the emperor were ready enough to aid Gregory against him, the emperor was forced to humble himself for a time, and to stand in the snow in the garb of a penitent for three days, praying for the Pope's pardon at a place called Canossa, though in after time he defied Gregory again and got the better of him. Yet Gregory had taught so many men to believe that in this quarrel the cause of the Church was the cause of God that for nearly two hundred years it often

seemed that the Pope was mightier than emperor or king.

It will be seen that the Church had travelled far away from the state of things when it was persecuted by kings. It now claimed to call them to obedience and rule them in the name of God. This attitude culminated during the life of a Pope whom some people reckon was the greatest who ever claimed to be a successor of Peter; while others think that, though he was undoubtedly a sincere man, he was far from seeing at times what was righteousness and what was iniquity. This was Innocent the Third, who was the youngest man ever to be made Pope. Like Gregory, he believed that the Pope was set over the Church and over all men, having all sceptres and thrones subject to him.

STEPHEN LANGTON WHO NEVER FLINCHED AS THE CHAMPION OF FREEDOM

So great was Innocent's power that he was able to decide which of two princes who claimed to be emperor should be acknowledged. When Philip Augustus, King of France, committed sin, he made him cease from his wrong-doing, and the King of Leon, in Spain, in like manner. Also he placed England under an interdict, and would have taken away King John's crown and given it to the King of France if John had not made submission. Therein Innocent thought he was doing right, though in England there were few who were ready to admit that any foreign priest, were he the Pope himself, had power and authority to choose their king.

One thing, however, Innocent did for which all Englishmen should respect his memory. He chose as Archbishop of Canterbury Stephen Langton, a man who feared neither Pope Innocent nor King John, but stood up manfully for justice and right, claiming from the king for the Church no more than the Church's due, and yielding to the Pope's bidding no more than was his due. For what he had at heart was the good of the whole people of England.

When Innocent was reconciled to John by the king's submission, Langton was none the readier to suffer John to play the tyrant, but himself took the chief part in uniting the barons to demand from the king the great Charter of English liberties. This he did, though Innocent himself bade him desist. When John was dead, and some of the barons disliked the Charter

because it hindered them from playing the tyrant over their vassals, it was by Langton's influence that the Charter was again confirmed in spite of them.

Pope Innocent the Third not only claimed the right to rule kings but also forcibly to rule the inmost and most sacred beliefs of every individual man.

A TERRIBLE DAY IN THE BITTER HISTORY OF PERSECUTION

The freedom of men to obey, on their own account, the loftiest thoughts and aspirations that come to them was at stake. Terrible persecution, as bad as the early Christians ever suffered, was started against good men by the Church, and was enforced by war and by law. The crime punished was heresy: that is, not believing what one cannot believe.

Most strangely, at the very time when wholesale slaughter was being practised on the Albigenses—Christians in the south of France—a movement began within the Church, and gained the approval of Innocent the Third, for returning to the simple purity and loving kindness of Jesus Himself, as they shone forth from His life and teaching.

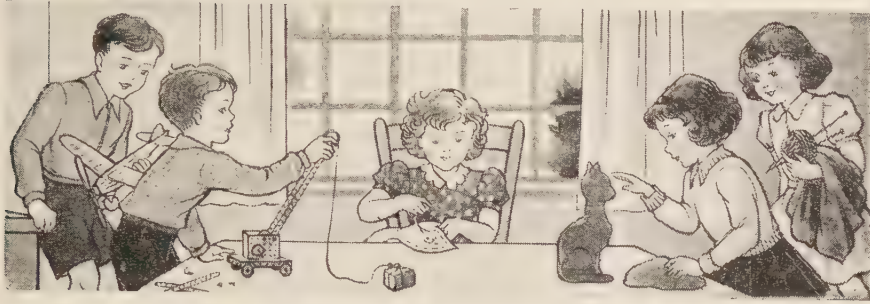
A young man named Francis, son of a rich merchant of the Italian town of Assisi, after an early life of gaiety and thoughtlessness, became deeply impressed by the need for a simple, wholly unselfish, joyous goodness. He took as his ideal, in fact, the life of our Lord as we have it preached in the Gospels. Never has there been a more Christ-like life than that lived by Saint Francis of Assisi.

FRANCIS OF ASSISI, THE CHRIST-LIKE FOLLOWER OF THE MASTER

He insisted on assuming poverty, living with the poor, and making loving kindness towards all living creatures the motive force of his whole being. In seven years a brotherhood of 5000 men had been formed accepting the same vows that he had taken. Thus the Franciscan Order was established within the Roman Catholic Church. It illustrated the original and simple Christianity of Christ, side by side with the form of Christianity which had been built up through the ages—the Kingdom of Heaven within the heart, and the Kingdom of Earthly Pomp.

The war between these two ideals has been going on ever since in Christianity, and its progress must be traced in our next and final chapter.

The Interests and Pleasures of Life for All Indoors and Out



SIMPLE LEATHERWORK

SOME really beautiful things can be made with leather, and it takes years of study and training to become a skilled craftsman. However, there is no need for us to learn all the details of the craft before we are able to make useful little things with leather, so this page and the next are devoted to showing us how easily we can make them from odd pieces of material.

First of all let us consider what is required before we start. We shall want some materials—odd pieces of thin leather, such as baghide, basil, or suede can be bought fairly cheaply, or we can cut some quite good pieces from an old handbag, leather coat, jerkin, or other discarded leather goods. Some thonging is also required. These narrow lengths of leather or plastic can also be bought, but if we have a piece of leather long enough, we can cut them ourselves. As we are not stitching, but working in a simpler manner by thonging, needles and thread are not needed.

Tools are the next things to think about, and we shall want a flat steel ruler, or a strip of metal with a straight edge, a very sharp penknife, and a small punch to make the holes to take the thonging. As we are making only small articles, a small punch is required, such as one used for punching holes

in paper. A knitting needle can be used for this purpose in very small work. A very sharp knife always makes the cutting of leather much easier and neater, so we keep our penknife sharp by rubbing it occasionally on a "buff-stick." This can be made by sticking a strip of fine emery paper on a flat piece of wood as shown in the sketch.

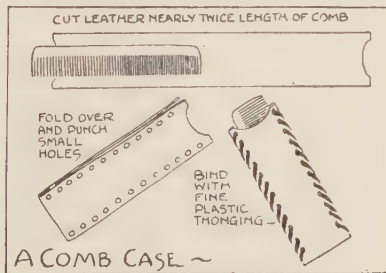
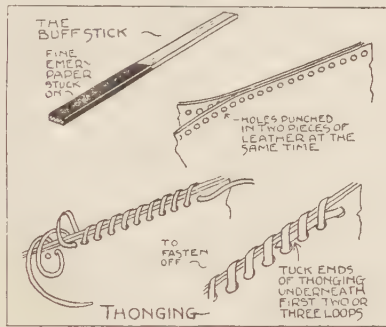
Every care should be taken when cutting the leather. For straight cuts, lay the material on a flat piece of wood. Place the steel ruler along the line where the leather is to be cut, and keep it firmly

pressed down. Then we take the knife, hold it like a pen, but with the handle almost vertical, and keeping the blade close to the ruler, press downwards and draw it towards us. It is important to lay the leather across

the grain of the wood, as the knife blade is liable to run with the grain and slip away from the ruler. When making a long cut, we keep the ruler pressed down right to the very end, otherwise the leather will stretch and the bottom corner will not be cut square. Curves, after being

marked out in pencil, can be cut with a pair of scissors.

Now for punching the holes. To ensure that this is done evenly, the two pieces of leather should be held firmly together. This can be



CRAFTS • GAMES • NEEDLEWORK • PUZZLES • SCIENCE EXPERIMENTS

THINGS TO MAKE & DO

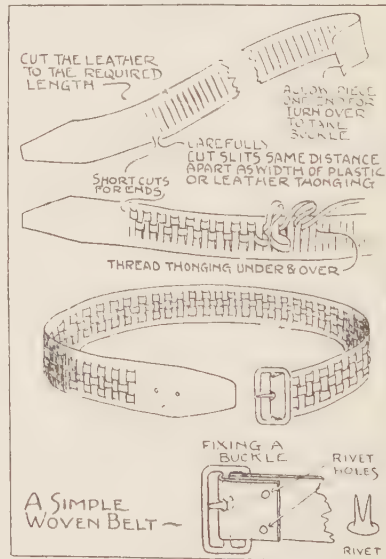
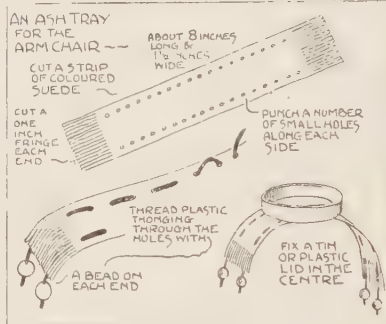
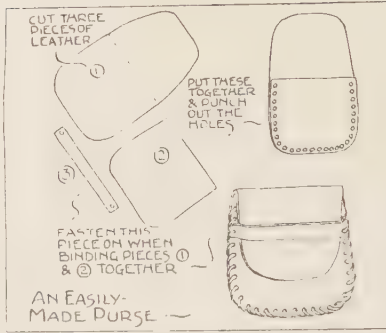
done by sticking the two edges together first, or by roughly stitching with large stitches, the thread being pulled out after the holes are punched through. Paper clips can also be used to keep the two pieces of leather together.

One of the simplest things to make is a comb case, which is made from one piece of leather. First take the comb and lay this on the piece of leather and mark round with pencil, as shown in the sketch on the preceding page, allowing for the holes to be punched round. Cut off the strip, which should be twice the length of the comb. Now fold over the leather, neatly keeping both edges together, and punch the holes round the sides, making them in both thicknesses of leather at once. All that is necessary now is the thonging; the method of working is shown in the first picture on the previous page. When this is completed, fasten the ends off strongly.

The purse is made in a manner similar to that of the comb case, and can be used as a school purse, with a loop attached for hanging round the neck.

An armchair ash tray is a very useful present, and the illustration shows clearly how it is made. The actual ash tray can be a very small one, which can be bought, or the lid off a tin or the aluminium top of a small carton can be used. The tray can be fixed to the leather by making two or three small holes in the bottom of the tin or aluminium ash tray with a thin nail, then sewing the tray to the leather as if sewing on a button. A "turn-over" paper fastener can be used if a small slit is made in the bottom of the tray and in the leather. The fastener is then passed through the two slits and turned over in the usual manner.

In making the simple woven belt, care should be taken when cutting the slits to see that they are all an equal distance apart and



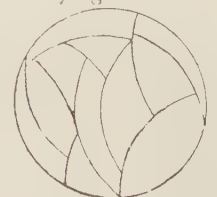
are all the same length. If we are using three or four thongs, the length of the slits should be the width of all the thongs plus a little over to allow for the bending when the thongs are woven in and out. The buckle should be sewn or riveted on. Riveting is easily done by first sticking the end of the leather down after the buckle has been placed in position, then punching two small holes. Insert a small rivet in each hole, turning over the ends of the rivet with a hammer, and flatten them out. Two or three small holes should be made at the other end of the belt to tighten or loosen when it is worn.

After we have made all these things in leather with a ruler, a knife, and a small punch as the only tools, we may like, as pocket-money will allow, to add to our equipment and go in for leathercraft in a big way. Then we should first get a good book on the subject—the local library is quite likely to have one—and study this carefully.

Thonging, as already shown, is the simplest way to join leather. Next comes stitching, and for this we shall need some needles and thread. Hand sewing is usually done with the aid of two needles, one on each end of the thread. One needle is pushed through one side of the leather, then the other is pushed through the same hole in the opposite direction and the ends of the thread pulled tightly together. Thus a double

stitch is obtained. Sewing-thread should be treated first by rubbing it over with shoemaker's wax or beeswax. This makes it much stronger and prevents its fraying.

ANSWER TO THE PUZZLE OF THE BROKEN PLATE ON PAGE 6794.—All the pieces were found, but the owner could not put them together to make a perfect plate. The picture shows how the puzzle was solved.



A PAPER-KNIFE MADE IN PLASTIC

PATIENCE is the quality most needed when handling plastics for the first time. There is a knack in dealing with this modern material in all its different forms, but many attractive things can be made from it.

Plastic thread and thonging, sold in hanks, and "ribbon," "tape," belting, and material for making pretty aprons and other fancy articles, can be bought by the yard at almost every store, and may be used in much the same way as similar sewing materials.

Plastics which can be cut with a saw, and then, if necessary, softened by heat and moulded to shape—the kind from which the paper-knife was made—are available at handicraft shops, either transparent or in lovely opaque shades.

Plastics of this type can be obtained in sheets of varying thicknesses and sizes and are sold by the pound, a piece about nine inches square and one eighth of an inch thick weighing about ten ounces. They make up delightfully into boxes, trays, ornaments, and many other useful and decorative things. Where two pieces of plastic have to be joined, as in making a box, a special cement is used, and this should be bought at the same time as the material.

These plastic "off-cuts," as the pieces are termed, are protected with a paper covering, for the highly-polished surface is easily marked, and though the marks can generally be removed with a polish sold for the purpose, it is simpler to avoid making any.

The paper-knife shown was cut from a nine-inch square off-cut, three-sixteenths of an inch thick, and turquoise blue in colour, leaving enough over to make two more like it. Thus the knives make cheap presents, though we should warn the receivers that the objects must not be washed or left to soak in very hot water, or they may lose their shape.

No pattern is needed for the paper-knife, as

the picture is one-third its original size, so that it is quite a simple matter to draw a pattern the right size using squared paper. From this pattern, the outline is drawn on the protective covering of the plastic, leaving a little margin all round for finishing, as in woodwork. The cutting-out is done with a fretsaw, though had the outline been straight, a small saw could have been used.

Do not be tempted, for quickness, to try a treadle saw if one is available, as the greater friction will cause the plastic to soften. This in itself might not matter, but as plastic cools it sets very quickly, and the edges of the cut may partially rejoin; also, when the sawing stops, the plastic is likely to set around the fretsaw and break it.

After the article has been cut, the rough edges must be smoothed off with a file. Then the long curved side of the knife and its point

have to be fined down equally on both sides to make a thin edge which can be used to open and slit envelopes neatly. This also is done

with a file, and when the knife is properly shaped, a final smoothing-down is given with very fine glasspaper.

There is now nothing left to do but polish the knife until it has an equal gloss all over. Special polishes can be bought, or plate powder, whitening, or metal polish can be used in the ordinary way, but it takes patience, perseverance, and "elbow grease."

Making an article which has to be bent to shape is quite a craftsman's work. After cutting the article out to a flat pattern, the plastic must be soaked in boiling water until it is pliable enough to bend to the required shape. The minute or two taken for this varies according to thickness.

The moulding should be done round a pattern cut out in wood first. Work deftly, and if possible do all the shaping at one time to avoid heating again to remould.



THE FINISHED PAPER-KNIFE

HINTS FOR THE YOUNG RIDER

RIDING a horse is a knack which can only be acquired by practice, but there are a few things the beginner should know before he starts.

The most important thing is that the reins are for guiding the horse, not for helping the rider to keep himself in the saddle. They must be lightly held and never jerked or tugged.

Riding a horse is a combination of grip and balance, gripping with one's knees and developing an instinct of balance—"daylight" should never be seen between the rider's

knees and his saddle. The first knack to be acquired is that of rising in the saddle when trotting. It is best not to make a deliberate attempt to rise, but to let the horse throw one up and down. When cantering the rider sits down in the saddle all the time, and this is another accomplishment that can only be developed by practice.

It is a good thing to begin by making friends with the horse, patting him and fussing over him. But there is only one way to horsemanship, as with so many other things, and that is to have confidence in oneself.

PIGEONS AND HOW TO KEEP THEM

PIGEON-KEEPING is one of the oldest of hobbies, having been followed by the ancient Egyptians and by the Greeks and Romans. Many of the present-day breeders and exhibitors of fancy and racing pigeons began in their boyhood by keeping a single pair of pet birds, and any boy can start in the same way.

The first essential is a weatherproof cote, which is also protected from, or out of reach of, the pigeon's natural enemies, cats and rats. A shed, an outhouse, or an old chicken house would convert very well.

If the ground is at all damp a raised floor should be built so that air may circulate underneath, and a wire run like that of a fowl-house may be constructed, but considerably higher, and fitted here and there with branches or perches for the pigeons to rest on. This will make a useful flight, and it should certainly not be less than eight feet high. The size will be regulated by the space available, but the bigger the better.

There must be an adequate opening between the house and the flight, with a landing-place on each side. Of course, a flight is not absolutely necessary, but it is safer, as in some of the best birds the homing instinct is not strong. Though when they have come to know their home and have nested, they may be allowed to fly freely, as they will return to their nesting-boxes.

Inside the pigeon-house a series of nesting-boxes must be arranged in tiers, and these should be placed on one side, and short perches fixed round the other sides. In the middle of the floor should be kept a vessel of fresh drinking water, such that the birds cannot bathe in it, and in different parts of the house boxes filled with grit. The floor must be strewn with sand or sawdust.

The short perches should be so arranged that the pigeons on one cannot reach those on another. The birds will quickly select their own perches. If the perches are placed one above another, two pieces of wood fastened together, gable fashion, must be attached to the wall just below, to prevent anything falling on the pigeons below.

Each nesting-box for a pair of pigeons should be divided into two compartments.

This enables the hen-pigeon to lay a second clutch in one division while young birds are occupying the other. There should be entrance holes to each compartment, side by side with a short platform in front, to do duty as an alighting board for both.

Long platforms serving several nesting-boxes must be avoided, as they lead to quarrelling among the birds. The size of each compartment should range from 12 inches by 12 inches by 10 inches high to 14 inches by 14 inches by 12 inches high, according to the breed of pigeon kept. These vary considerably in size.

The interior of the pigeon-house should be fairly well lighted, and thoroughly ventilated without being draughty. It must be frequently cleaned out to keep everything sweet and wholesome. In the open-air flight, cover the floor with fine gravel or shingle, and have a drinking vessel and also a large,

shallow bath full of water for bathing.

The pigeons may be fed by hand at regular intervals—two meals a day is sufficient, and only as much as the birds will eat up should be given at one time. Or another suitable arrangement is to have in the house a self-supplying hopper, so that the birds can feed themselves. Small

maize, wheat, grey peas, barley, tares, and buckwheat should be given; beans, peas, and maize being increased in quantity in winter, and wheat, barley, and tares in the summer. Household scraps are appreciated, and hemp seed should be given sometimes as medicine.

Grit can be bought, or can be made up of half a peck of gritty sand, half a peck of old lime mortar, and three and a half pounds of coarse salt, well mixed together. Such a supply will be sufficient for a year, and will help to keep the birds healthy.

The hen-pigeon lays a clutch of two eggs, and the period of incubation is about seven-teen days, during which the hen covers the eggs at night and the cock-bird by day.

It is largely a matter of taste which breeds to keep, but it is wise to start with the long-faced and hardier breeds, as these will bring up their young without any assistance and are easier to manage. Suggestions for the beginner are the carrier, magpie, and nun.



RACING PIGEONS HOMEWARD BOUND

BOATS ANY BOY CAN MAKE

THERE are many ways of making sailing boats and steamers, and metal, wood, cardboard, and even paper can be used in their construction.

Water-line models are quite easy to make. These all have flat bottoms and are cut from flat pieces of wood, with decks and other fittings fixed on the top. The more solid kind of model is made by carving the hull from a solid block of wood. This is more difficult. Another way of making a model is by building it up from strips of wood all screwed together. By this method a hollow hull can be made.

Cardboard and paper are used for models meant for show only, although these will float quite successfully if they are well varnished. Metal, of course, is more difficult to use because the parts have to be soldered together.

Here are some very simple models which any boy can make. First there is the little flat-bottomed sailing boat which can be taken to the seaside or to a pond, and which, with the addition of a small metal rudder fixed at the back, will sail quite straight. The metal rudder can be cut from an empty aluminium tin.

The sail of the boat should be made from stiff material such as thick drawing paper. The mast can be made from an old knitting needle pushed firmly into a small hole in the hull. The bottom ends of the sail should be held down with pins. Do not make the sail too large or the mast too high. A small

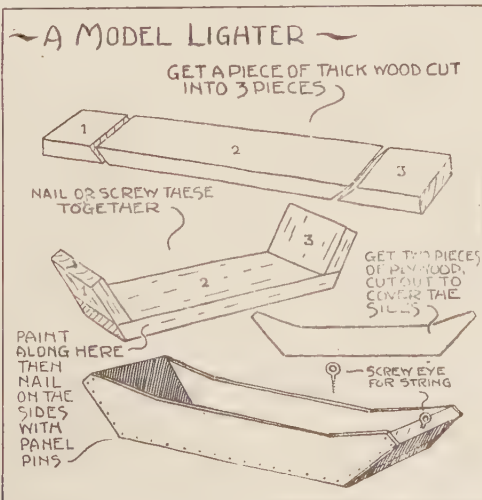
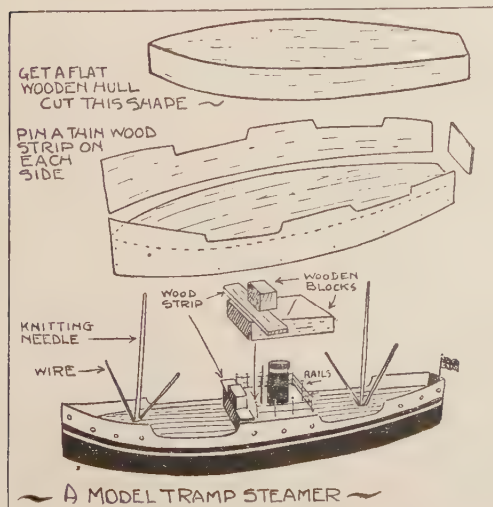
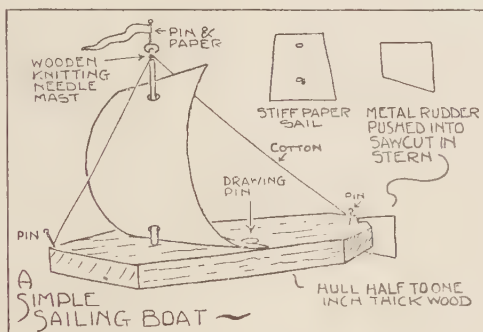
cut in the stern is all that is needed to fix in the rudder as shown in the sketch.

The model steamer which will float illustrates how to build up a model by using thin wood stripped off plywood. The material bends easily and can be tacked round the hull. Cut out the hull first, then carefully fasten on the sides with panel pins. This forms the bulwarks. The panel pins can be bought at any ironmongers very cheaply. Do not use tinned tacks as these will split the wood.

The deck fittings, such as the upper decks and bridge, are just pieces of wood pinned on with panel pins. Sandpaper all these parts to make them neat and smooth. The masts can be made of knitting needles and the derricks of pieces of wire pushed into holes made in the deck. To add rails on the upper deck, use small pins and cotton or very thin wire twisted round them, putting in the bottom rail first. A piece of dowel rod can be used for a funnel. When the model is finished it should be painted, the deck being white and the hull another colour.

The last sketch shows how to make a model lighter, like those used on rivers. Quite a lot of fun can be had with a large model of this craft by loading it up with sand, stones, or other material and pulling it across the water on a long string.

In all cases, models which are to be used for floating should be given a good coat of paint, especially if any glue is used for fixing deck fittings, such as funnels and ventilator shafts.



HOW TO PLAY ROUNDERS

ROUNDERS, modest ancestor of the national American game of baseball, has been a popular pastime in Britain since the early 18th century. It was played in a haphazard fashion for many years, but the National Rounders Association has now standardised the rules and given the game a new dignity.

The equipment required is of the simplest character—a stick, 18 inches in length and $5\frac{1}{2}$ inches in circumference at its thickest part; a soft ball; and four posts, each four feet in height. The pitch should be marked out with white lines, as shown in the plan.

Teams consist of nine players each, and the captains toss to decide which shall bat first. The team which scores the greater number of rounders in two innings wins the game. If one team is leading by ten or more rounders in the first innings, the captain has the option of requiring the opponents to follow on.

The batting team having decided its sequence of players, the first batsman takes her place with both feet in the 6-foot batting square. Facing her is the bowler, with both feet in the 8-foot bowling square. Behind the batsman is the back-stop, the equivalent of a wicket keeper in cricket. Four fielders guard the four posts and the remaining three take their places in the deep.

It is advisable to have two umpires. One should stand behind the bowler at a point just beyond the second post; the other should stand to the batsman's right. Players waiting to bat should form a line and as each batsman completes the course she should take her place at the end of this line, thus preserving the proper sequence.

The bowler must bowl underarm, keeping her feet within her square until the ball has left her hand. It is a no-ball if it is not delivered underarm; if it is jerked; if it is out of reach of the batsman; if it is higher than the top of the head or lower than the knee as it passes the batsman; or if it is directed straight at the batsman. The penalty for three consecutive no-balls is half a rounder to the batsman.

A batsman is allowed only one good ball and, having received it, she must run, whether she hits it or not. Having hit it, she scores a rounder if she succeeds in running round the track, passing outside posts 1, 2, 3, and 4 in their proper order and touching the fourth post with her hand. If she fails to hit the

good ball and completes the track she is awarded half a rounder. A rounder cannot be scored if the batsman overtakes another member of her own team standing at a post ahead of her.

We will assume that the first batsman has scored a rounder. The second player in the line takes her place in the batting square, but succeeds in reaching only the first post as the result of her strike. The third batsman then strikes and as she, too, must make for the first post, it follows that the player already standing there must move on. So the game proceeds, with each player preserving her correct place in the batting sequence and yet making as much ground as possible.

When standing at a post, a batsman must maintain contact with it with her hand.

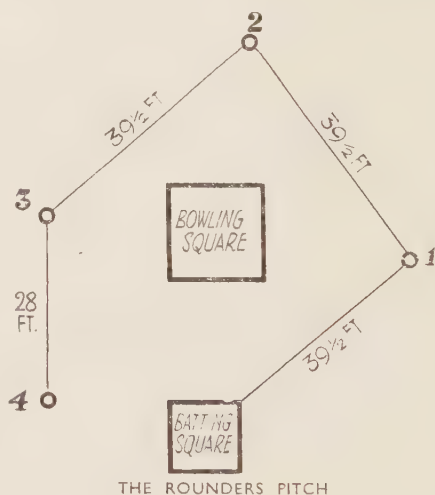
There are seven ways in which a batsman may be given out: 1, If the ball be caught, unless "no-ball" has been called by the umpire. 2, If she leaves the batting square before she has either hit the good ball or allowed it to pass her. 3, If she runs to the inside of a post. 4, If a fielder with the ball in her hand touches the post to which she is running, before she makes contact. 5, If, after having tried to hit the ball (unless a no-ball has been called), a fielder touches her with the ball in her hand while she is

still in the batting square. 6, If a fielder with the ball in her hand touches her as she is running between the posts. 7, If she obstructs a fielder or intentionally deflects the course of the ball. In all cases the hand holding the ball shall count as the ball.

Two or more batsmen can be put out before the ball is returned to the bowler, and the last few batsmen can be dismissed in a body if none has reached the fourth post when a fielder throws the ball, full pitch, into the batting square.

When only one batsman is left, she is entitled to one minute's rest between each rounder she scores. She also has the choice of three good deliveries from the bowler, but, naturally, forfeits the right to any remaining balls if she is caught out or starts to run.

The above are the most important rules, and from them you should have gained a fair idea of how rounders is played under modern conditions.



The Great Stories of the World That Will Be Told for Ever



ORPHEUS AND EURYDICE

ORPHEUS was a mortal, but people said that his mother must have been Calliope, the muse of heroic poetry, and his father Apollo, the god of music.

He was one of the heroes who sailed in the Argo, and he made a chant telling of their wonderful adventures in quest of the Golden Fleece.

But he was even greater as a musician than as a poet. When his neighbours tried to give strangers an idea of his lovely art they would say that it was magical. Trees bent their boughs to hear him. Hawks and doves, sheep and wolves, forgot cruelty and fear as they listened.

Perhaps the ancient Greeks hid a parable in that story; Orpheus stands for Art, which reconciles men of all politics and creeds, though war-mongers try to separate them into camps of hatred.

Orpheus married Eurydice, a lovely woman who was dearer to him than his fame as an Argonaut or music itself. They had not been married long when Eurydice, walking alone in the woods, saw a man hiding in a thicket. Fearing a robber or a madman, she turned to flee. He pursued. The terrified woman ran blindly, not looking where she went, and trod on a snake.

Hours later Orpheus, after seeking everywhere, found her dead body. One foot was swollen, and bore the unmistakable fang-marks of a serpent's bite.

So great was the woe of Orpheus that he vowed to follow her to the under-world, and dwell there with her if he could not win her back to life.

With his lyre on his back Orpheus wandered far and wide till he came to the gateway of Hades. It was guarded by the three-headed dog monster Cerberus, but at the sound of Orpheus's lyre the creature fawned, and let him pass.

Down a long tunnel Orpheus went till he came to a swift, black river. The banks were crowded with ghosts begging Charon, the grim old ferryman, to take them across to King Pluto. He carried over those who had received burial in the ancient manner, with a coin placed under the dead man's tongue as Charon's fee; but those who had not were obliged to shiver on the banks for a hundred years before he would bring them over free. All ancient religions paid great heed to funerals, and believed that the soul's welfare depended on these ceremonies which propitiated the gods of death.

IMAGINATION · CHIVALRY · LEGENDS · GOLDEN DEEDS · FAIRY TALES

Charon would have refused to carry a mortal if Orpheus had not sung and played as he stood on the banks. The lovely strains melted even that hard heart, and Orpheus passed over into the dark kingdom of King Pluto.

It was divided by four great rivers, Acheron, Styx, Phlegethon, whose floods were of fire, and Lethe, whose waters brought forgetfulness. Three judges, Minos, Aeacus, and Rhadamanthus, examined all the new-comers, and weighed their good and bad actions in the scales of Themis, the blindfold goddess of justice.

If good outweighed bad the soul was led to the Elysian Fields, a beautiful country where friends and lovers wandered in meadows and groves like those on Earth.

If bad outweighed good, the soul was driven to Tartarus, a place of punishment. Here cruel King Tantalus, tormented by hunger and thirst, stood up to his chin in a stream of water, with a branch of fruit hanging just above his head. But every time he stooped to drink the water flowed back from his mouth, and every time he snatched at the fruit it swung out of reach. Here wicked Sisyphus was compelled to roll a great stone to the top of a hill, but every time he reached the summit the stone slipped from his grasp and ran to the bottom. Here Tityus was chained flat to the ground, while a vulture continually fed on his living flesh. Here Ixion was bound to a wheel, which whirled him round and round in endless misery.

Between Tartarus and the Elysian Fields sat King Pluto, Lord of the Dead, black-bearded, black-robed, and stern. Beside him sat beautiful Queen Proserpine, whom he had stolen from the Earth.

Orpheus made his way to their throne. He did not speak but sang his story, and all the under-world listened to that heart's song. Pluto's black eyes grew dim. The

wheel of Ixion and the stone of Sisyphus stood still. The flood ceased to torment Tantalus, and the vulture forgot to prey on the tortured Tityus.

When Orpheus was silent Pluto spoke. For the sake of that song he would reverse all the iron laws of his kingdom and let Eurydice return to Earth, on condition that Orpheus did not look at her till they had left the kingdom of the under-world.

Orpheus waited joyfully with lowered eyes till the ghost of Eurydice was fetched. Then he set out on the return journey. It seemed very long, and his impatience to look back at the dear one who followed grew greater at every step. At length he crossed into the upper world, and turned at once with a triumphant cry. Alas! He should have waited till Eurydice, too, had set foot on Earth. No sooner had he seen her than she vanished.

This time he sought to enter Hades in vain. For seven days he wandered on the banks of Acheron, beseeching Charon to give him a passage. Then he returned to Earth, and, sitting by the banks of a river, poured out his grief in a last song.

It was at the time of the feast of Bacchus. Some women called to him to play them a dance measure, and when he paid no heed they began to stone him. At first the stones turned aside harmlessly. But the women drowned the lyre by their shrieks, and then the stones fell true.

Orpheus was killed, and flung into the river with his lyre. As the lyre sank its strings cried "Eurydice! Eurydice!" The gods would not let the great musician's instrument lie in the mud of a river; they set it in the heavens, and it became the constellation called Lyra.

Some say that his body was afterwards drawn ashore and buried, and that nightingales sang about the grave. As for his spirit, it joined Eurydice in the Elysian Fields.

THE SHAM IMMORTAL

SALMONEUS was the most important person in the universe, to Salmoneus.

He was a king, but that did not content him. He wished his subjects to fall down and worship him. He proclaimed that he was divine. He had a great bridge of bronze built before his palace, and made slaves flash torches about his chariot wheels as they rumbled over it, so that his people should think it thundered and lightened when Salmoneus went forth.

Some rustics were so simple as to believe that their king was really a god, and some courtiers thought it good policy to pretend that they believed it. Then Jove said: "I will show them the difference between god and man, lightning and torches, chariot wheels and thunder."

As Salmoneus rode out in triumph, and men fell on their knees by the roadside, Jove hurled a thunderbolt from Heaven, and the sham immortal fell dead.

THE BRAVE FRENCH MAID OF NOYON

AT a house in the little town of Noyon, in France, something had gone wrong with the drains, and workmen had to be sent down to open the drains and clean out the sewer. That is a dangerous thing to do because of the poisonous gases.

In this case four men were busily at work when they were overcome by the sewer-gas, and were unable to give the signal to be drawn up.

The people in the house wondered what was the matter and grew alarmed, but no one dared venture down.

Then a brave servant maid, a girl of seventeen, begged to be tied to the rope and let down into the sewer.

This was done, and she reached the group of men lying helpless down below. As quickly as her trembling hands would allow her she tied one man to the rope, and jerked it as a signal for him to be drawn up. Willing hands hauled up the burden, and on reaching the surface the unconscious man was still alive.

A second time the girl tied a man to the rope, and he was drawn into safety.

But the next time the dangling rope came down for the girl to catch she was gasping for breath. She struggled against the feeling of suffocation, and tried to fasten the third man to the rope.

This she managed to do, but she herself was on the verge of unconsciousness, so, with a desperate effort, she wound her long hair round the rope and tied it tightly. Then she lost consciousness; but the watchers above carefully, very carefully, pulled the double burden up into safety just in time.

The fresh air soon revived the girl, and then she bethought her of the fourth man down in the dangerous sewer. It was hardly likely that he would still be alive, but there was a slight chance, and so again this noble girl risked her life. But this time her effort was in vain, for the poor man was drawn up lifeless.

The French nation loves to reward a brave action, and some handsome gifts found their way to the unselfish maid who so cheerfully and readily risked her own life for the sake of others.

THREE CUPS OF COLD WATER

THERE is a saying of Jesus which has woven itself into all the history of humanity, into the periods of famine, the days of battle, and the hours of death. It is the saying that we do Christ service even when we give only a cup of cold water to those who thirst.

Our brave English soldier Sir Philip Sidney, who lived at Penshurst in Kent, and wrote tender poems under the noble oaks which we may still see spreading their wide arms over Penshurst Park, was one of those who have lived to fulfil Christ's exhortation.

Sir Philip Sidney was called by Queen Elizabeth "the jewel of her times." He was a great scholar and traveller, a poet and musician, an athlete and horseman, above everything else a great gentleman. The nobility of his nature, the bravery of his spirit, and the graciousness of his manner rendered him the most notable and romantic figure of the age in which he lived.

In a battle at a place in Holland called Zutphen, this noble man was mortally wounded. He had fought like a hero. Two horses had been killed under him, and still he led his soldiers with a dauntless

courage into the thick of the fight. But at last a bullet struck him, and as he reeled in the saddle his horse turned and bolted with him from the field.

When he was in the camp he called for a cup of water. The day was excessively hot; he was in a raging fever; the agony of his wound was indescribable.

With great trouble a little water was brought to him. He lifted himself up, took the bottle, and was about to place it to his lips when his gaze caught the eyes of a poor wounded soldier fixed longingly upon the water.

The look in the man's eyes made Sidney forget his pain. With a noble smile he stretched out his arm and handed the bottle to the dying man, with the immortal words: "Soldier, thy need is greater than mine!"

Such was the glory of Sidney that the epitaph of one of his friends was in these words:

Fulke Greville,
Servant to Queen Elizabeth,
Counsellor to King James,
Friend to Sir Philip Sidney.

Another hero is famous for a deed somewhat similar. This is the generous

Rudolf of Hapsburg, whose descendants ruled over Austria, a kingdom made by his power. On one occasion Rudolf was with his army in a place where everyone was afflicted by terrible thirst. Somebody was able to find a cupful of water, which was brought to Rudolf as a great and priceless treasure. He took the prized cup in his hands, but exclaimed: "I cannot drink alone. All cannot share this little draught. I thirst not for myself but for my whole army." And, so saying, he tipped up the cup and emptied the water on the ground.

One more story we may give because it shows in some measure, but not fully, the Christlike spirit.

During the seventeenth-century wars between Denmark and Sweden a wounded

Dane was about to raise a wooden bottle of water to his lips when a cry reached him from a wounded Swede.

The good Dane, using the words of our own Sidney, stumbled to the side of his enemy, and saying "Thy need is greater than mine," knelt down and held the water to his lips. But the Swede, suddenly raising a pistol, fired and wounded the Dane in the shoulder.

"Rascal!" cried the twice-wounded soldier of Denmark. "I would have befriended you, and you would murder me! Now will I punish you. I would have given you the whole bottle, but now you shall have only half."

He raised the bottle to his lips, drank of it, and then gave it into the hand that had tried to kill him.

THE DOG THAT DID ITS DUTY

A COLLIE was once fastened to its kennel by so short a chain that it could move out only a few feet, and the kennel was in an open garden.

One bitter, wet night a female dog found her way from the street to the kennel, and evidently begged for shelter, for in the morning the collie was found outside his kennel, dying from cold, while the female dog, an entire stranger, was comfortably installed inside the kennel, with five newly-born puppies.

To match that pathetic incident we must turn to a snowy night in the life of James Hogg, the Ettrick shepherd poet. The snow was coming down heavily and the flocks were out, so the shepherd called up his faithful collie, talked to her, and sent her off to search one side of the moors while he scoured the other.

She went her way and he went his; and late at night he returned, exhausted, bringing his share of the sheep. But there was no sign of the collie or her sheep, so he sat down in his cabin to wait.

Hour after hour passed, and then came a low whine and a feeble scratching at the door. The poet rushed out. There was the collie's share of the sheep, every one of them safe and sound, and there was the collie, in her mouth a tiny puppy. She laid her baby at her master's feet, then disappeared into the night. Presently she returned, bringing another puppy.

Her babies had been born in the snow, yet she had done her duty, and not a sheep was missing. She brought the second of her babies to her master, placed it in his lap, looked pitifully into his face, and then lay down and died!

THE MAN WHO SAVED HIS SON

A FRENCH merchant named Labat was taken ill in the early years of the last century, and retired to a beautiful house on the banks of the River Adour.

Here, one morning, his gaze was attracted by a rider struggling with a restive horse on the opposite bank. The old merchant, who was wearing a dressing-gown, peered across the distance and watched the battle between man and horse with anxious eyes. Suddenly he was horrified to see the rider hurled violently from the back of the plunging horse and thrown into the river.

The merchant never hesitated. He forgot his age and his own safety, and, hurrying down, dived in after the drowning stranger. Such is the call of Humanity.

He was a good swimmer, but the heavily-booted horseman was hard to save, and it was only after a terrible struggle that the merchant succeeded in bringing him safely to shore.

Then, with a cry which must have startled the morning echoes, the grand old man exclaimed fervently:

"Sacred Humanity, what do I not owe you? I have saved my son!"

THE FABLES OF PILPAY

About five hundred years after Christ the Persian King Nushirwan sent one of his courtiers to India to obtain a book called *The Fables of Pilpay*. The fame of these stories was well known, but the Indians were jealous of their possession, and would not allow the fables to be turned into other languages. However, by stealth and bribery the courtier managed to obtain a copy. After this the fables were soon translated into every dialect of the East and many European languages. It is said that the Bible alone surpasses it in this particular. The general teaching of the fables is that *Love is strength*. The fables, in the original, are all linked together like the stories of the Arabian Nights. A king is warned in a dream to search for treasure in a certain place; he finds in a jewelled casket a piece of satin on which is written several wise proverbs. The proverbs are explained in a series of fables by a wise old Brahmin called Pilpay. Another name for them is Kalilah and Dimnah.

THE FOX AND THE HEN

A HUNGRY fox, spying a fine fat hen, made up his mind to eat her. But as he was about to spring on her he heard a great noise, and, looking up, saw a drum hanging on a tree. As the wind blew, the branches beat upon the drum.

"Ah!" said he. "A thing that can make so much noise must certainly have more flesh upon it than a miserable hen."

So, allowing the hen to escape, he sprang upon the drum; but when he tore the parchment open he found that there was nothing whatever inside.

"Wretched being that I am!" said he. "I have missed a meal for nothing."

By being too greedy we may miss everything that is worth having.

THE IRON-EATING RATS

A MERCHANT once had to make a long journey, and first of all sold all his property and bought bars of iron, because he thought this the safest form of wealth. Moths could not devour them nor thieves run off with them. He asked a friend to lock them in his treasure chamber, and set off with an easy mind.

When the traveller returned he went to his friend, who met him with an air of mingled insolence and hypocrisy.

"Oh, yes," he said, "I locked your iron up safely enough, but who can keep rats out with bolts and bars? Unfortunately they have eaten it all up!"

The traveller had trusted his friend, and had no proof to show that the iron had been left in his charge; it was useless to seek justice. He therefore went his way.

On passing out of the house alone he saw one of his friend's children, whom he picked up and carried off without being seen.

That evening he met his friend rushing through the streets nearly mad with grief.

"My son is lost!" he cried.

"Well," said the traveller, "that must be the child I saw carried off by an owl. What a country this is, where a little bird

can carry off a great child of five and rats eat bars of iron!"

At this his friend suddenly looked less terrified, and greatly ashamed.

He went his way in silence, to give orders that the merchant's iron should be carried to his house and the child brought back.

Deceivers are usually as unsuccessful as they deserve to be.

THE THREE FISHES

THREE fishes lived in a pond. The first was wise, the second had a little sense, and the third was foolish. A fisherman saw the fish, and went for his net.

"I must get out of this pond at once," said the wise fish. And he threw himself into a little channel that led to a river.

Presently the fisherman returned with his net, and stopped up the channel leading to the river. The second fish wished he had followed the example of the wise fish; but he soon thought of a plan to escape. He floated upside down on the surface of the water, and the fisherman, thinking he was dead, did not trouble about him any more.

But the foolish fish was caught, and taken home to be eaten.

We should all endeavour to be wise.

FOUR FRIENDS

THERE were once four good friends—a little goat, a tortoise, a rat, and a raven. One morning the others were anxious because the goat did not meet them at the brook as usual. The raven flew up into the air, and presently came down with the news that their friend was entangled in a hunter's net.

"I'll gnaw through it," said the rat.

"I'll carry you there," said the raven.

Away they flew, and the last cord had been bitten when the tortoise toiled up.

"Oh, friend," cried the goat, "why did you come? The hunter may be here any moment, and how can you escape?"

The tortoise was about to say that she could not endure safety while her friend's

life was in danger when, sure enough, the hunter arrived. The goat galloped off, the raven flew, the rat slipped into a hole, but the poor tortoise had not crawled two inches before the man picked her up and put her in a bag. He was very angry, but he had at least got *something* for the pot.

The three friends now met in a great state of misery, but the goat said: "Our tears will do the tortoise no good. We must act quickly. I have a plan by which we may rescue our comrade."

The others heard and approved it. Soon after the hunter saw a little goat limp out from behind a clump of bushes. She went slowly and seemed an easy prey. Throwing down the bag, that he might run faster, the man set off in pursuit.

Several times the goat let him come quite close, and then, seeming to make a painful effort, escaped him. "It is only a matter of tiring her out," said the man; "I must have patience." So he was led far from his bag.

Meanwhile the rat was gnawing the string that tied up its mouth. The tortoise was soon free, and then, with many exclamations of thankfulness and relief, she crept into hiding under the bush.

When the goat thought that time enough had been given to accomplish the rat's task she suddenly set off for the hills at a canter. The hunter was amazed to see her lameness suddenly cured. When he returned to find the tortoise gone he gaped more than ever; then, thinking that he had been tricked by goblins, he hurried from the place and never harried the four friends again.

Love is strength.

THE MAN WHO WAITED TO BE FED

A RELIGIOUSLY minded man was once walking in a forest when he saw a falcon carrying food to a young raven, which he had taken under his protection.

"Ah," cried the man, "what a lesson is here! The goodness of Heaven is unbounded. The parents of this poor fledgling have met with some accident, but it is not allowed to starve. How greedy I am to run about searching for food instead of trusting to Providence!"

He decided to give up his time to prayer alone, and so betook himself to a cave, where he stayed, without food, for three days. However, no bird or beast came to bring him anything to eat.

On the third night he had a dream, in which a voice said to him, "Son, the goodness of Heaven is unbounded, for it has given you the means with which to feed yourself. There was indeed a lesson in what you saw in the forest nest; imitate not the fledgling, but the merciful falcon who worked harder in order that he might have something to give to the needy."

God helps those who try to help themselves.

THE FALCON AND THE HEN

SAID a falcon to a hen, "How ungrateful you must be! You are fed with the best of food, you have a snug bed provided for you at night, you are protected from foxes, and yet, when the men who do all this for you want to take hold of you, you run away and do not return their caresses. Now, I do not receive anything like so many benefits, and yet I allow the men to hold me, and I serve them when they go hunting in the field."

"Ah!" said the hen. "What you say is true. But, remember, you never see a hawk roasting in front of the fire, whereas you see hundreds of good fat hens treated in that way."

Circumstances alter cases.

THE KING WHO GREW KIND

A CRUEL king was riding one day when he saw a fox attack a hen. But just then a dog ran after the fox and bit his leg. The fox, however, lame as he was, managed to escape into his hole, and the dog ran off. A man who saw him threw a stone at the dog, and cracked his head; but at this moment a horse passing by ran against the man and trod on his foot. A minute later the horse's foot slipped on a stone, and his ankle was broken.

"Ah!" said the king. "This will be a lesson to me. I see that misfortunes always overtake those who ill-use others."

And from that time the king became a kind and wise ruler of his people.

Punishment sooner or later overtakes those who wrong others.

THE ADDER IN A BURNING BUSH

A MAN was once travelling with his camel through the desert when he saw a bush on fire, and heard a small voice crying from the midst of it imploring help.

He dismounted, and saw an adder ringed in with flames. The man emptied his money from a small bag, which he fastened to his spear, and stretched it out

through the flames. The adder jumped in, and was borne out of danger.

"I want no thanks," said the man, as the snake crawled out, "but I think gratitude should make you promise never to hurt mankind again."

"On the contrary," returned the snake, "I intend to bite you and your camel. That is the way men return a good action."

"No, no!" cried the man, seeing the adder ready to strike with venomous fangs; "men return kindness for kindness. Only consult some witness, and I will abide by his judgment."

"Agreed," said the snake, and they set off together.

The first creature they met was a cow, who replied to their question: "It is the custom to reward a kind action by a cruel one. All my life I have supplied my mistress with milk, butter, and cheese. She has sold my calves to the butcher, and is having me fattened for the same customer."

The snake gave the man a look, but he said, "One witness is not enough! The cow is prejudiced; let us ask another."

"Very well," said the snake, and asked the tree above for its opinion.

"Men always return evil for good," said the tree. "My race gives them fruit and shade from the sun, yet they cut us down and burn us."

"Are you satisfied now?" asked the snake, with a triumphant smile.

"Give me one more chance!" pleaded the man, and the snake agreed, for he felt sure the answer would always be the same.

The next creature they met was a fox, to whom the adder briefly told the story, asking if his ingratitude was not customary and right.

The fox looked at him severely.

"It is not likely that I should give judgment in your favour," he said, "when you begin by telling a lie. Of course you could never have got into that little bag."

"Don't trust me, trust your own eyes!" cried the adder. "Open the bag!"

In jumped the snake, the fox winked, and the man drew up the strings that fastened the neck of the bag.

"My judgment," said the fox, "is that the man shall pound the ungrateful snake to death with a large stone."

Avoid the company of sly and vicious people, for they are never to be trusted.

THE BRAVE DIVER OF TOR BAY

ONE summer's day a torpedo-boat came to grief in Tor Bay, Devonshire, for her propeller shaft snapped and pierced her plating, so that the water rushed in.

Some other boats came to her aid, but she sank in about half an hour. The crew had taken to the boats, and there, 150 feet down, the boat remained until it was decided to send divers to examine her.

Two men, Sidney Leverett and Walter Trapnell, came forward, and one light evening they were taken out to where the wrecked boat lay.

Trapnell was let down first, and he soon sent up a telephone message that he had found the wreck. He was told to note the damage and to signal when he could be drawn up.

But no signal came, and the full twenty minutes, beyond which time it is dangerous for a diver to stay down at such a depth, had passed. The men in the boat pulled the life-lines but all they felt was a heavy weight.

Sidney Leverett, recognising that something serious was the matter, sent down a message to ask what was wrong. Then, to

his horror, he heard that Trapnell's lines were fouled, and he was unable to get clear. That meant that his friend was caught like a fly in a spider's web.

Without a moment's delay he slipped over the edge of the boat, and dropped down to the wreck. There he found his friend standing on the bottom, his life-line and precious air-tube entangled in the wreck. He worked hard to free him.

Every instant's delay added danger, for Trapnell had used up all the air available to him, and if he could not be freed soon Leverett knew he would become unconscious and die. Every moment he himself was getting weaker and weaker, yet his friend's life depended on his quickness and skill. So he struggled on patiently.

At last he set Trapnell free. Leverett signalled, and sank into unconsciousness, while the men in the boat drew up the two divers very slowly, lest the rush of fresh, pure air should kill them both. When they were at last freed from their diver's dress Leverett slowly recovered, but his poor friend, for whom he had risked so much, died the next day.

THE GIRL WHO HELD THE FORT

THE history of the early French settlers in Canada provides us with many a story of courage and devotion. Foremost among those whose names have become famous for heroic deeds in those perilous times was Madeleine de Verchères, a girl of fourteen, who saved a fort.

The fort consisted of several houses surrounded by palisades, and a strong blockhouse. One day, Madeleine was standing by the riverside, some distance from the fort, when she heard the cry: "Run, Mademoiselle, run! The Iroquois!"

She turned, and saw a band of Iroquois Indians. Swiftly she ran back to the fort.

Nearly all the people of the place were away in the fields when the attack was made, and were killed. There were left in the fort two soldiers, an old man, some women and children and Madeleine's two brothers, boys of ten and twelve.

At the first sign of the danger the soldiers fled to hiding. As the Indians delayed their attack Madeleine went round to inspect the defences. In the blockhouse she found the two soldiers preparing to set light to the gunpowder and blow up the fort. Madeleine's courage shamed them, and they set themselves to defend the place. They and Madeleine's two brothers opened fire from the loopholes, while Madeleine fired a cannon as a signal of

distress. This signal was repeated from post to post till the warning of danger reached the city of Montreal.

Night came on, and had the Indians attacked them in the darkness all would have been lost. Madeleine ordered her elder brother and the soldiers to guard the women and children in the blockhouse while she posted her young brother, the old man, and herself as sentinels.

Throughout the dread night they passed the cry "All's well," and the Indians, finding the place so well guarded, refrained from attacking it.

For a week the Indians besieged the fort, but, not knowing how weak the defenders were, dared not attack it. At the end of the week, during which time Madeleine had scarcely rested, she was dozing with her gun under her arm when she heard the sentry cry that either Frenchmen or Indians were moving up the river. Help had come from Montreal!

The brave little leader marched to the river, and saluted the officer in command.

"Monsieur," she said, "I surrender my arms to you."

The relief was accomplished. The Indians had fled. Madeleine could now rest secure. The news of her bravery spread far and wide, and her heroism was rewarded by a pension.

THE LEAK IN THE DYKE

IN Holland the people have continually to keep watch on the sea, as parts of the country are below its level at high tide. To keep the sea from flooding the land, great banks called dykes were built.

This true story is of a little Dutch boy who saved the low-lying district where he lived from being flooded. His name was Peter, and one evening his mother sent him to take some cakes to an old blind man who lived near the dyke.

On his way back, Peter walked below the tall bank, on the other side of which the sea was muttering. "You're a wicked old sea," said Peter. "You would like to break through and spoil our lands and homes, but our strong dyke keeps you in your place!"

Just then he was startled at hearing a trickle of water on his side of the bank and, running to the spot, he was horrified to see a stream no wider than his hand running out from the bank. Young as he

was Peter knew what that meant, a leak in the dyke-wall, which, though small now, could grow to a flood in a single night.

He knew, too, that to leave it and run for help might mean that it would widen beyond control before men could reach the place. Scooping up handfuls of sand he stopped up the crack and at the same time shouted for help. But there were no houses near by and no one heard his cries.

The sun sank and still he shouted—more feebly now—and worked to keep the crack closed. As the night wore on he wondered whether he would die out there in the cold. But he stuck to his post and continued working to prevent that tiny breach from being disastrously widened.

They found him next morning, senseless but still alive, one arm in the breach—the boy who had saved their lands.

For many years afterwards the fathers of Holland told their sons the story of little Peter's courage and devotion to duty.

THE NOBLE ALCESTIS

IN the old simple days of shepherd kings a prince of Thessaly called Admetus met a handsome stranger on the plain. It was Apollo, who had been banished from Heaven, but he saluted the mortal with humility, and asked for work.

Admetus needed a shepherd, so for many years afterwards the god of light and music and poetry kept the king's flocks. Admetus was a good master, indeed he was the friend rather than the tyrant of his servants, so that Apollo grew to love him. When Jove's anger had passed, and Apollo was recalled from exile, the Sun god sought to do Admetus a service. He journeyed to the great cavern where the Parcae, or the three Fates, were spinning human lives.

These three aged sisters, clad in white and crowned with narcissus, presided over human birth and death. Clotho, who held a distaff, was the Fate who directed whether a man should be born in palace or hovel, Lachesis spun out the actions of his life on her spindle, while Atropos cut the thread with her great shears when she decided that his hour for death had come. They were inexorable, and even Jove, king of heaven, could not intervene when they cut the life-thread of a hero he loved.

But the beautiful Apollo, with his music and sweet voice, softened their hearts, and persuaded them to promise not to cut the thread of Admetus's life, on one condition: when Death came for him some friend must be willing to die in his stead.

The news was brought to the shepherd king by a soothsayer. Perhaps he smiled and said, "Then I shall not live longer than other men. Who, except in the heat of battle, would go down to the dark realm of King Pluto that his friend might live on in the light of the Sun?"

A little later Prince Jason set out in the good ship *Argo* to recapture the Golden Fleece. Among the heroes who went with him was Admetus. He bore himself bravely, but this is not the place to tell again their adventures. It suffices to say that he returned in safety.

Jason brought home with him the beautiful witch Medea as his wife. Now, Jason had been unjustly deprived of his kingdom by old King Pelias, but on his return he stayed at the usurper's Court, and all seemed friendship. Pelias was an old, sickly man. One day his four

daughters were telling Medea how it saddened them to see his weakness. The witch said she could renew his youth by magic. First, however, she would prove her powers to the eager girls.

She got an old ram, had it killed, and put the body in a huge cauldron. She threw strange herbs into the pot, and chanted weird ditties. By and by she lifted out a young, playful lamb.

"I can turn your father into a radiant youth," she said, "but it requires courage and secrecy."

The daughters were so anxious to renew the old man's life that they made a slave stab him that night. But when he was dead Medea only laughed at them, and refused to use her magic to restore him. In vain were all their cries and tears. They were driven into exile as murderers.

But Admetus believed their innocence, and offered them shelter in his Court. One of them, called Alcestis, became his wife. After time had dimmed the tragedy in her memory they were happier than most kings and queens have ever been.

At length Admetus was stricken down by a deadly fever that no physician could cure. Alcestis watched by his side day and night, for she had heard the prophecy.

One night, as she watched by torchlight, Alcestis saw Death approach. He was a tall, grave man, clad in black. Alcestis felt no fear as he glided from the doorway to the bedside. She rose and said, "Take my life for his!"

Death held out his hand; she took it without lament, and he led her down to the sunless world where King Pluto ruled with his fair wife Proserpine, and heroes wandered on the banks of the Styx. For, to the loving Alcestis, the upper world without her husband would have been as dismal as this grey country.

Admetus began to grow well from the moment that his wife spoke her noble words. All Greece joined with him in celebrating the lovely memory of Alcestis. She was the pattern of womanhood, the most fragrant name in history.

But they say that the king found life as heavy as death without her, and that Hercules, pitying his grief, went to the underworld. The hero offered to wrestle with Death if Alcestis should be the prize. After a desperate tussle Hercules triumphed, and brought Alcestis back to Thessaly.

ARACHNE AND HER TAPESTRIES

IN all Colophon there was no needle-woman so skilful as Arachne, daughter of Idmon the dyer. Her tapestries were masterpieces of beauty. Great and small flocked to see her at work. The townsfolk boasted of their clever citizen, saying, "There is not such another in the world."

Arachne grew dizzy with such praise. In her conceit she said: "Truly, I am ready to challenge all needle-workers to a contest, from Minerva downward."

As she spoke an old woman, a stranger, who stood in the crowd of admiring neighbours, said gently: "Child, such talk is rash and irreverent. Mortals cannot hope to rival the gods."

Arachne tossed her head and exclaimed: "I would say it to Minerva herself!"

"She is here," said the old woman, suddenly growing upright, young, and beautiful. "She accepts your challenge."

Arachne was not frightened, but only made more proud than ever because a goddess had descended from heaven to meet her. Arachne's vanity made her feel sure of victory, for she was certainly the finest worker that ever depicted heroes and queens, woods and seas, with a needle. But she was not a goddess.

THE PRINCE WHO BECAME A GRASSHOPPER

NEVER be cruel to a grasshopper. It might be a prince, as you shall hear.

Laomedon, first king of Troy, had a handsome son called Tithonus. The boy's mother was a daughter of the River Scamander, but history does not tell us whether the water-baby was found among the reeds or discovered in a giant lily. How ever it was that she came to live among men, she was beautiful as the famous river, and her son took after her.

Tithonus was fond of hunting, and was often abroad before the stars had faded from the sky. So Aurora, the dawn goddess, grew to know and love him. One dewy morning she appeared to him suddenly in her rose-coloured gown and her wreath of sunbeams. Tithonus fell in love with her, as the shepherd prince Endymion had fallen in love with the Moon goddess. After that there was only one part of the day he cared for: it was the brief, lovely moment when Dawn came to Earth.

But at length a cloud spread over his happiness. It was the thought that death must one day part him from his immortal

"Let us begin now," she cried. "Here are two looms, and thread enough for a mile of tapestries."

Long they worked in silence. Arachne chose as her subject a group of incidents showing the gods at fault—for in Greek Legend the gods were subject to the weaknesses of man, though they were immortal. It was indeed a beautiful picture, and in every way perfect as mortal could make it. But when the neighbours who praised it turned to Minerva's work, which showed her battle with Neptune, everyone cried out in astonishment. The sea looked so real that women drew back for fear of being wetted by the spray, and the needle-work people were so lifelike that a child ran screaming from their warlike attitude.

Arachne could not be blind to the difference. She fled from the humiliating sight of her work hung by Minerva's. Then, because pride was the very breath of life to her, and she could not bear to live without it, she hanged herself. But Minerva, pitying her foolish rival, turned her into a spider hanging on the end of its thread.

The descendants of that first spider still go by the family name of Arachnidae, and are famous for their spinning.

lady. He begged her to ask this boon of the king of the gods, that he should live for ever. After much supplication by Aurora, Zeus granted her request, and the unchangeable decree went forth that Tithonus should never die.

Years sped quickly, and Tithonus began to get wrinkled, grey, and stiff. He had asked eternal life and not eternal youth from the gods. He was no longer the handsome lover of the Dawn; but they remained faithful friends. Tithonus enjoyed the wise pleasures of middle age.

Alas! middle age could not last for ever. Hundreds of years passed, and Tithonus was a helpless old weakling whose life was a burden to him. One day, with tears running from his sightless eyes, he begged Aurora to reverse the decree and let him die. But the word of the king of the gods could not be altered.

Yet Aurora gained permission to change the old man's form. He became a lively grasshopper, leaping and singing among the thyme flowers.

Somewhere he must be chirping still.

DAEDALUS AND HIS SON ICARUS

DAEDALUS was an Athenian inventor who gave the world the wedge, the axe, and sails. He made, besides these useful things, many cunning toys, such as statues which moved by themselves.

He had not, alas, that greatness of heart which should have gone with such cleverness of mind. When he saw that his nephew Talus showed signs of the same genius, Daedalus gave himself up to the vilest jealousy. One day, as the boy watched his uncle at work, a sudden rage seized Daedalus, and he hurled the boy down to the courtyard below. Talus was killed instantly.

Daedalus fled from justice with his son Icarus. They came to Crete, where King Minos sent for Daedalus, and employed him at the Court in various ways. He made the famous labyrinth in which Theseus afterwards fought the bull-headed man who then dwelled there and devoured human beings. But when his work was finished, Daedalus and his son were imprisoned by the treacherous king.

Young Icarus despaired, but Daedalus, the ingenious, contrived a way of escape.

With wax and feathers he made two huge pairs of wings. One day the two captives strapped them on, and sailed over the prison walls and the sentinels, away to freedom.

The delight of Icarus in his new power was boundless. He soared and swooped instead of flying steadily as his father bade him. Now he wanted to see how high he could ascend. Up and up he climbed, till the hot Sun melted the wax, and his strong pinions were destroyed.

He dropped like a stone in the ocean, and was drowned. That part was called the Icarian Sea after him.

Now Daedalus felt the same anguish as the father of Talus. Helplessly he flew round and round over his beloved son's blue grave, and then he winged his mournful way to Sicily.

Here for a while his talents brought him favour and money, but his story soon became known. King Minos was angry with the King of Sicily for harbouring the runaway. Fearing a war, the Sicilian had Daedalus executed. This time the inventor did not try to escape. Life was not sweet to him without Icarus.

SITS-BY-THE-DOOR

English children all know the story of Una and the Lion. Red Indian children have a legend very like it. Here it is.

ONCE upon a time there was a beautiful girl, who belonged to the Blackfoot tribe, called Sits-by-the-door. She was her parents' darling, and had many friends.

But one day the tribe changed camp. First went a party of warriors in single file, then came the women and children, and more warriors brought up the rear. Suddenly a party of Crow Indians sprang out upon the middle of the line. They seized many women and children, while their comrades shot down the first Blackfoot warriors who sprang to the rescue. Then they made off swiftly with the captives. Sits-by-the-door was among them.

It was a long, painful journey to the Crow camp by Yellowstone River, and at every step the poor prisoners thought of the terrors before them. When they arrived some were burned, others made slaves.

Sits-by-the-door was given to a cruel man who ill-used her brutally. Every night he tied her wrists and ankles together lest she should escape. But his old wife was kind to the slave in secret.

One day when the Indian was hunting she told Sits-by-the-door that her husband had decided to kill her.

"If he spares you till tonight," she said, "I will help you to escape."

The Indian came in weary, gulped his supper, and fell asleep. The old woman cautiously untied the ropes. Then she gave Sits-by-the-door a flint, a bag of pemmican, and a pair of moccasins.

The poor girl sped out. All night she ran through the woods, and merciful Heaven sent snow to cover her tracks. Through the day she had to lie hidden, but at dusk she set off again.

Days passed; her moccasins were in ribbons and her store of pemmican was exhausted. Soon she began to weaken from hunger, and could only totter a little way at a time. All at once she heard a noise behind her; a great grey wolf was swiftly following her!

Sits-by-the-door began to run, but she was too exhausted to go far, and at last she dropped down in despair. She expected to feel the wolf spring on her shoulders, but nothing happened. She looked up. He lay at her feet like a dog.

Then Sits-by-the-door knew he was an ordinary beast of prey, but an animal that had been sent by the Great Spirit to watch over and guard her.

"Brother," she said, "I hunger!"

Instantly the wolf bounded off into the woods to seek food.

Sits-by-the-door thought she was far enough from the Crows to light a fire in safety, so she gathered brushwood and kindled a flame with the flint; then she lay down to wait.

Before long the wolf returned with a little dead fawn. Sits-by-the-door cooked it, and shared it with the wolf. From the skin she made moccasins for her torn feet. She slept fearlessly, guarded faithfully by her strange friend.

In this manner the two travelled together for several days, till at last they reached the Blackfoot camp.

It is impossible to imagine the joy of the girl's parents at seeing her again, for they thought she must have perished by fire and torture.

Sits-by-the-door was worn out by the long journey and the excitement of her homecoming. She bade her kinsmen be kind to her friend the wolf; but that night she fell ill, and while her parents were busy tending her the Indian dogs attacked it, and drove it out of the village.

Every evening for some time it would come to a hill overlooking the camp and howl. The girl's friends brought it meat, but it ran away from them. It wanted Sits-by-the-door, who was too ill to come. At last it came no more.

Sits-by-the-door recovered, and lived a long, happy life. Perhaps it was in honour of her friend that Indians started to call the Milky Way the Wolf Trail.

THE POACHER'S SILENCE

SOME thirty years ago a gamekeeper was killed in the east of England, and two poachers were arrested for the crime and brought to trial.

There was no difficulty as to which of the poachers was the guilty party. One of the men confessed that he and he alone had done the horrible deed. But for some reason or another there was a general feeling that he was innocent.

When the verdict was given, and the judge had pronounced sentence of death, the friends of the prisoner bestirred themselves, and, raising the plea that he suffered from a deformity of the neck which would make it a torture to hang him, they succeeded in getting a respite.

But after the respite had been granted the law ordered a medical examination of the prisoner, and none of the doctors could find any reason why he should not meet the punishment for the crime he had committed. He was, therefore, for the second time, condemned to die.

But the people in his part of the world were utterly unconvinced that he was guilty, and immediately set about getting up fresh petitions for his reprieve. So numerous and so earnest were these petitions that the law again granted a respite, and the poacher was sentenced to penal servitude for life.

Think what those words "penal servitude for life" mean. They mean that a

man ceases to be a man, and becomes a number; that every tomorrow has the same soul-killing monotony as yesterday; that the life of the world is shut out from him by frowning walls.

Perhaps this poacher many times wished that the law had put him to death, for he lay in prison day after day, week after week, month after month, for nearly thirty years. Then he was released. He went into prison a strong and vigorous man; he came out white and bowed, and marked for ever with the grey pallor of the prison cell.

And when he came out and found that his fellow-poacher was dead the true story of the crime was told. It was not he, but his fellow-poacher, who had killed the keeper—struck him down with the butt of a gun, and thrown the body into a pond. He himself had had no hand in the crime. But why did he take upon himself the guilt?

The answer shows us that even in bad men there is a spark of goodness. This rough English poacher held his peace because the real murderer was a married man with a wife and children dependent on him for support. He himself was unmarried and had no dependents.

And so, for the sake of the other man's wife and children, this simple, rough-hearted poacher did what he could, and willingly offered his life.

KING ARTHUR AND HIS KNIGHTS

The tale of King Arthur should be as dear to us as the hills of home. Hector, Siegfried, and Roland are foreigners, but Arthur is our own English hero, whose story has been told in the inglenook to generation after generation of English children. It has coloured their dreams and games, shaped their ideas of courage and faithfulness, become part of their characters ; and so it has influenced history. When Caxton printed the story in one of the first English books, the good craftsman owned that " divers men hold opinion that there was no such Arthur." Historians incline to believe that the legend sprang from the true story of a Celtic chieftain of the fifth or sixth century, who beat off Saxon invaders and made many other British kings his vassals. Round his memory a wonderful group of fables grew up, and when the British were conquered by the Saxons this story became their great comfort. They handed it down like an heirloom. In time it was arrayed in all the trappings of fourteenth-century chivalry, and bedizened with magic jewels. In that form it was written down about 1469 by Sir Thomas Malory, for the pleasure of Edward the Fourth.

THE COMING OF ARTHUR

WHEN King Uther Pendragon was at war there appeared in his capital a ragged man called Merlin, who soon convinced the King of his magic powers. Through the wizard's counsel the King overthrew his enemies and obtained the hand of Igraine, Duchess of Tintagil. Merlin served the King on condition that the heir to the throne should be given him, unchristened, to bring up.

When a son was born King Uther told his servants to carry it to the beggar man at the gate. Merlin took the babe to a knight called Sir Ector, who was richer in honesty than in this world's goods, and bade him bring up the prince as his son, calling him Arthur.

So the boy grew up far from the flatteries and pomps of a Court, submissive to the good knight and his son Kaye, whom Arthur took for his elder brother.

Some fifteen years passed, and King Uther died. Many of his barons desired to seize the throne, and the land seemed on the eve of civil war, when lo, there appeared a miracle ! In the churchyard of the greatest church in London a mighty stone was found with an anvil on it, and a sword embedded in the anvil. On the sword were inscribed the following words : " Whoso pulleth out this sword is rightful King of England."

All the lords of the land gathered to the place, and strove in vain to pull out the sword. They encamped near by, and held tournaments to pass the time till one of their number should succeed in plucking it from its resting-place.

Sir Ector came to London and brought his sons. One day, as they rode out to the jousts, Kaye discovered that he had left his sword at home. Arthur offered to return and fetch it. But the house where they lodged was locked, for everyone had gone to the tournament. Arthur deter-

mined that his brother should not be disappointed in the tournament for lack of a weapon. He remembered hearing of the sword in the churchyard. Arthur hurried thither, drew it out easily, and carried it to Kaye.

When Kaye saw what was written on it he went to his father and said, " I must be rightful King of England." His father led him to a church, and made him swear on the altar to tell the truth. Then Kaye owned that it was Arthur who had given him the sword.

Sir Ector knew the time had come to tell the prince who he was. Arthur's first thought was one of grief because those he had loved as father and mother were not his true parents.

At first the barons refused to accept the boy as their king. The sword was put back in the anvil, and once more no one could pull it out save Arthur. For a year pretexts of delay were made, but at last the boy was crowned amid the acclamations of the common folk.

EXCALIBUR

MERLIN became Arthur's counsellor. One day the wizard took the young king to a lake. A boat was moored to the bank. Suddenly in the midst of the lake an arm appeared holding a scabbarded sword. Then a maiden rose from the waters near by. Arthur called to her, " O Lady of the Lake ! If that sword be yours I pray you give it to me, and I will give you treasure in return."

" Take the sword, King," said the Lady. " I will ask my gift in my own time."

She sank beneath the waves. Arthur rowed out to the midst of the lake, and the hand yielded up the sword to him. Merlin told him that the sword was called Excalibur, and in battle it would shine like fire, dazzling the enemy. The scabbard was as wonderful as the sword, for it would

save its wearer from losing blood, however terrible his wounds might be.

With the aid of these weapons, Arthur conquered Scotland, Ireland, Gaul, Norway, and Muscovy. He ruled England

justly, righting the wrongs of the poor, and giving the realm peace. No crown was more glorious than his in all Christendom. His fame spread far and wide, so that his enemies began to plot his ruin.

THE ROUND TABLE

THE most beautiful lady in the world was said in those days to be Guinevere, daughter of the King of Camelard. Arthur sent Lancelot, most renowned and most courtly of his knights, to offer her the crown of an English Queen. Her father was proud that his daughter should be consort to the heroic King Arthur, so Guinevere was forced to leave her home and follow Lancelot into a strange land. On the journey he was so kind, and cheered the exile so gently, that she grew to love him. Lancelot loved her also, but he held his peace, thinking he loved her in vain. So she was wedded to King Arthur amid great rejoicings. Because he had done his embassy so well Lancelot was appointed the Queen's champion, bound to take her part in any quarrel and guard her life.

Guinevere's father had sent Arthur a great round table, at which a hundred and fifty knights could feast together. The King vowed that only the worthiest knights should have a seat at it. There was no higher honour in the land than to be one of the Knights of the Round Table. Wealth or lineage could not obtain a place there without worth.

When anyone was oppressed by tyrant or witch he would send to King Arthur for help, and one of the Knights of the Round Table would ride to the rescue. Their adventures fill many books. Here we can only name some of the most famous.

Gareth came disguised to the Court, and lived there in the kitchen, taunted by Kaye, but kindly treated by the King's nephew Gawain and by Lancelot, who pitied him. At last came the boy's chance to prove his mettle. A lady arrived seeking help against her enemies, and the scullion

claimed the boon of helping her. She was angry and loaded him with insults, but he followed her in spite of all she could say, overpowered her enemies, and then, when he had won glory, revealed himself as Arthur's nephew, son of the King of the Orkneys.

Geraint, the Knight Errant, wedded Enid, whose father was a poor knight. Suspecting her of a wrong she had not done, Geraint made her suffer cruelly, but in the end he discovered her innocence.

Tristram, nephew of King Mark of Cornwall, fell in love with Iseult of Ireland. When he told his uncle of her beauty King Mark determined to marry her himself. The King of Ireland consented. Tristram went, broken-hearted, to live in exile. He married Iseult of Brittany. After many years he fell ill, and a soothsayer declared that he could only be cured by Iseult Queen of Cornwall, who was a skilful physician. Tristram sent a messenger to Cornwall, bidding him hoist white sails on his return if he were successful. Iseult of Cornwall hastened to save his life, but Tristram's wife was jealous, and told the sick man that she saw the vessel returning with black sails. At this news Tristram gave up hope, and died.

Lancelot was invincible in war and tourney, but he loved the world too well to be a peerless knight like young Galahad, whose name has stood for manly purity ever since those days. All men were eager to be Lancelot's friends. Many maids loved him in vain, and Elaine of Astolat, at whose father's castle he had lodged awhile, died of grief when he returned to Court. Elaine's dead body was laid on a barge, which drifted down to Camelot.

THE QUEST OF THE HOLY GRAIL

ON the eve of Pentecost, as the knights of the Round Table were at supper, a crashing like thunder shook the roof. Then a sunbeam, brighter than anything in the world, entered the hall, and in it floated a cup. By its glory they knew it for the cup

our Lord used at the Last Supper, called the Holy Grail. The air was filled with sweet scents, and a great peace stole into men's hearts.

Suddenly the Grail vanished. King Arthur thanked Heaven that he and his

knights had been vouchsafed this vision. "Amen!" cried Sir Gawain, Arthur's nephew, called the Courteous. Then he vowed to set out to seek the Grail on the morrow. If after a year and a day he could not see it he would know that the Quest was not for him. All the other knights vowed the same thing.

The brave men rode far and wide, meeting with strange adventures, but faring for the most part like Lancelot. He one day came on a tournament between two companies of knights, one mounted all on black horses and the other on white. The black seemed the weaker side, so Lancelot joined with them, confident of bringing victory by his prowess. But he was overborne, and stunned. Some men carried him aside into a wood, where they left him. When he recovered, Lancelot was filled with shame at his defeat. He mounted his horse painfully, and rode away. Soon he met a nun. "Ah, Lancelot," she said, "you are without peer among earthly knights, but in heavenly adventures you have been worsted. The tournament was a parable. The white knights battled for holiness, the black for sin and pride. You chose the worldly side. Beware of everlasting pain."

Then Lancelot's shame was greater than ever, and, deeming himself unworthy of the Quest, he returned to Camelot.

News came of the death of many knights, but none knew what had become of Sir

Percivale, Sir Bors, and Sir Galahad. More than three years passed, and then Sir Bors returned with a marvellous tale.

The three lost knights, though they had set out separately, were led together by many strange signs. They wandered on, encountering many perils, till they came to the sea, and there they found an empty ship, with an altar on it, and the Holy Grail shining through a veil.

The vessel sailed away of its own accord to Sarra. They went ashore, carrying their holy treasure. The king of the place seized the Grail, and flung the knights into a dungeon, where they lay for six months, comforted by visions. Then the king fell sick and died. He had no heir. While his counsellors debated who should be king, a mysterious voice bade them choose the youngest of the captive knights. So Galahad became king, and righted all the wrongs in that land.

A year after his crowning he awakened his friends, telling them to haste with him to the room where the Grail was kept. They saw a great company of angels about it. Galahad held up his hands to heaven crying, "Now, blessed Lord, there is such joy in my heart I would live no more on Earth if it be Thy will."

His companions saw the whole flock of angels take flight, with the likeness of Galahad in their midst. When they looked down, the Grail had vanished, and Galahad's body lay dead.

THE TREACHERY OF VIVIEN AND MORGAN LE FAY

MERLIN, the wise counsellor, fell in love like any foolish boy. His lady was called Vivien, and she is said to have been not mortal, but the child of a lake. She pretended to love Merlin, till she had learned all his magic arts. Then she told him of great treasure lying in an underground cave, and begged him to get it for her. No sooner had he descended than she, by strong enchantments, sealed up the mouth with a great boulder, so that Merlin was imprisoned for evermore.

Arthur had a sister called Morgan le Fay, who practised magic. She was angry with Arthur, who had slain her lover, and she determined to steal Excalibur. She never found an opportunity for that, but she managed to unbuckle the magical scabbard, and flung it into a deep lake.

Now Arthur was no longer proof against wounds; he had lost his wise counsellor, and many of his knights had perished in the Quest of the Grail. Shadows gathered over the sunlight of his reign.

THE PASSING OF ARTHUR

MORDRED, one of the king's nephews, was an evil man, jealous of Lancelot's prowess and the King's splendour. He spread abroad a lie that the Queen was a wicked woman, and so cunningly did he contrive that she was condemned to be

burned to death. King Arthur could not alter the course of justice; lover or stranger, queen or scullion, must suffer the same punishment.

Lancelot was away, but the tidings reached him. He galloped up with a

company of knights as the Queen was led to death, struck down her guards, and carried her off to a strong castle. In the encounter he had, though quite unknowingly, killed Sir Gareth.

The Pope sent a letter to King Arthur telling him to take back his Queen, who was innocent. Guinevere returned to Court, but Lancelot was banished because he had slain Sir Gareth. Gawain, Gareth's brother, would not permit Arthur to make peace with him. Lancelot went beyond the seas, and his friends with him.

Then Mordred gathered all his followers together and rebelled against Arthur. He was twice defeated in battle, but rallied again. Gawain got his death stroke in the first fight. He lived long enough to write to Lancelot making peace with him, telling of Mordred's treachery, and asking Lancelot to come to the King's aid. Many who should have aided Arthur stood aside because they were indignant at Lancelot's banishment. Before Lancelot could get Gawain's message, however, a third battle took place.

So terrible was this fight that at dusk Arthur and two brothers, Lucan and Bedivere, were all that was left of the two hosts. Arthur had killed Mordred, but the stricken traitor had gathered his strength for a blow which had cleft the King's helmet, and given him a frightful wound. Lucan and Bedivere carried the King to a little deserted chapel near by, and there Lucan fell dead of his wounds.

Arthur lamented the death of his good knights, saying, "Were I to live after them my life would only be sorrow. Weep not,

Bedivere, but take my sword Excalibur and throw it into the lake near by."

Bedivere took the sword, but its hilt was gorgeous with jewels, and its blade was famous through the world. He had not the heart to throw it into the dark lake. Justifying his action to himself, he hid it and returned to the King. Arthur asked what he had seen.

"Sir," answered Bedivere, "I saw nothing but the wind and the waves."

"You have not dealt truly with me," said the King, reproachfully. "Go, do a dying man's behest."

Bedivere went, but again he disobeyed; and then Arthur was moved to wrath and cried, "Ah, traitor, you care more for the sword than your king!"

At that Bedivere ran out, seized the sword quickly, and hurled it far into the lake. Before it fell an arm, "clothed in white samite, mystic, wonderful," came out of the water. It caught the sword and brandished it before both disappeared beneath the waves.

When Arthur heard that, he told Bedivere to help him to the lake, and when he had done so the knight marvelled to see before him a barge, containing many fair ladies robed in black.

"Lay me in the barge," said the King. The ladies received him with loud lamentations. Then they rowed him away.

So ends the tragic story of the King's last desperate fight against overwhelming odds. Some say that Arthur sleeps in a flowery land, whose entrance is a cave in the Welsh hills, and that he will return to his people in their sorest need.

THE END OF THE KNIGHTS

GUINEVERE became a nun at Almesbury, and spent six sad years praying for the King's soul.

When Lancelot returned to England and found all that had befallen he remembered what Galahad had said of this unstable world. He became a hermit, and seven others who had been his comrades in arms joined him in a life of humility and prayer. One night he had a vision bidding him and his companions go to Almesbury. He obeyed the vision, and on arrival two days later learned that Guinevere had been dead half an hour. The hermit knights bore her body back to Glastonbury, where they buried her.

A little while after Lancelot fell sick. One morning Sir Bors found him dead on his bed, and the smile on his countenance was like the smile of Galahad.

Old Sir Ector, who had seen the beginning and end of Arthur's glory, came to the burying. He looked at the dead man, whose face, according to custom, was uncovered, and said: "Ah, Lancelot, thou wert the courtliest knight that ever drew sword, and the faithfullest friend that ever bestrode a horse. Thou wert the head of all Christian Knights."

With the old man's words the story of King Arthur and the Knights of the Round Table was fitly finished.

KING ARTHUR AND HIS KNIGHTS



ENID AND GERAINT—FROM THE PAINTING BY ROWLAND WHEELWRIGHT



THE KNIGHTS OF KING ARTHUR—FROM A TAPESTRY DESIGNED BY SIR EDWARD BURNE-JONES
AND MADE BY MORRIS & COMPANY



LANCELOT AND ELAINE OF ASTOLAT—FROM THE PAINTING BY SIDNEY PAGET



SIR TRISTRAM IS ADMITTED AS A KNIGHT OF THE ROUND TABLE—FROM A FRESCO IN THE
KING'S ROBING-ROOM IN THE PALACE OF WESTMINSTER



KING ARTHUR IN AVALON—FROM THE PAINTING BY SIR EDWARD BURNE-JONES



QUEEN GUINEVERE IN THE NUNNERY GARDEN—FROM THE PAINTING BY MARY F. RAPHAEL



THE VISION OF THE HOLY GRAIL—FROM THE PAINTING BY EDWIN A. ABBEY

Reproduced from a Copley print by courtesy of Messrs. Curtis & Cameron



SIR GALAHAD
BY ALLAN STEWART



THE BEGUILING OF MERLIN
BY SIR EDWARD BURNE-JONES



SIR GALAHAD
BY G. F. WATTS



THE PASSING OF ARTHUR—FROM THE PAINTING BY JAMES ARCHER

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A FELLOW BY THE NAME OF ROWAN

WHEN war broke out between America and Spain in 1898 the first thing for America to do was to send a message from the President of the United States to the leader of the insurgents in Cuba. This leader, Garcia by name, had to be reached at all costs and told what America meant to do. It was also necessary to know definitely that he would fight on the side of America against Spain.

But could he be reached? Where was Garcia? He was somewhere in the wild mountains of war-stricken Cuba—somewhere, miles from cities, miles from post-men and telegraph boys, miles from everything. How could the President of the United States reach him?

With all the vast wealth and power at his disposal, the great President was helpless. He could not say to Garcia: "Help me, and I will help you." He could not say so simple a thing as that, although he was surrounded by telegraph and telephone wires, and had thousands of men to obey his commands.

But someone came to him and said: "There's a fellow by the name of Rowan who will find Garcia for you."

This fellow Rowan was summoned into the President's presence. He was asked if he could find Garcia. He said he would try. The President liked the look of the man, liked his way of speaking, and gave him a letter for Garcia.

Rowan took the letter and placed it in an oilskin pouch, which he strapped round his waist, next to the skin. Then he walked out and disappeared. In four days an open boat crept toward the coast of Cuba under the blackness of a midnight sky. The boat was shot forward on a wave, it grounded on the beach, and before a second wave reached it a fellow by the name of Rowan was walking up the shingle to the cliffs.

Three weeks passed away rapidly. At

the end of that time a man appeared on the opposite side of the island, entered a boat, and was rowed away. He had walked from shore to shore, evading a thousand dangers in a land hostile to his race and country, and he had found Garcia.

Thus appeared for a brief moment on the stage of history a fellow by the name of Rowan; and as silently as he appeared he disappeared again into the darkness and the silence, the hero of a flashing moment. All he told of his adventure was in these few simple words:

April 23. I received the cipher cable despatch "Join Garcia as soon as possible." At 10 a.m., dressed as an English hunter, I crossed Jamaica, and reached St. Ann's Bay at 1 a.m.

Boarded small sailboat, and by daylight entered the Caribbean Sea, kept well off the Cuban coast until dark, then landed about 11 p.m. Next morning proceeded through forest.

About noon, May 1, reached insurgents' headquarters. Conferred with Garcia, and arranged to be accompanied back by envoys with information.

Crossed the island of Cuba astride meridian 77 degrees, and reached coast about sunset May 5. Passed under guns of Spanish fort at 11 p.m., and by daylight was out of sight of Cuba on our way to Key West.

That is how Lieutenant Rowan described his journey through Spanish patrol vessels and the Spanish lines, through Cuban swamps, mud, fever, and mosquitoes—a deed which an American general described as "a most perilous undertaking, and an act of cool daring that has rarely been equalled in the annals of warfare."

But such deeds are not allowed to be buried in this world, and a great American journalist, Elbert Hubbard, who went down in the *Lusitania*, chose another way of telling the story of A Message to Garcia. His story of it has been printed millions of times, and we print it below because it should never be forgotten.

A Message to Garcia, By Elbert Hubbard

IN all this Cuban business there is one man stands out on the horizon of my memory like Mars at perihelion.

When war broke out between Spain and the United States it was very necessary to communicate quickly with the leader of the insurgents. Garcia was somewhere in the mountain fastnesses of Cuba—no one knew where. No mail or telegraph

message could reach him. The President must secure his co-operation, and quickly. What to do?

Someone said to the President: "There is a young fellow by the name of Rowan will find Garcia for you if anybody can."

Rowan was sent for, and given a letter to be delivered to Garcia.

How "the fellow by the name of Rowan"

took the letter, sealed it up in an oilskin pouch, strapped it over his heart, in four days landed by night off the coast of Cuba from an open boat, disappeared into the jungle, and in three weeks came out on the other side of the island, having traversed a hostile country on foot, and delivered his letter to Garcia, are things I have no special desire now to tell in detail. The point I wish to make is this: McKinley gave Rowan a letter to be delivered to Garcia; Rowan took the letter, and did not ask "Where is he at?"

By the Eternal! there is a man whose form should be cast in deathless bronze and the statue placed in every college of the land. It is not book-learning young men need, but a stiffening of the vertebrae, which will cause them to be loyal to a trust, to act promptly, concentrate their energies; do the thing.

Put this matter to a test: You are sitting now in your office—six clerks are within call. Summon any one of them and make this request: "Please look in the encyclopedia and make a brief memorandum for me concerning the life of Correggio."

Will the clerk quietly say, "Yes, sir," and go and do the task?

On your life he will not. He will ask one or more of the following questions:

Who was he?

Which encyclopedia?

Where is the encyclopedia?

Was I hired for that?

Don't you mean Bismarck?

Is he dead?

Is there any hurry?

Shan't I bring you the book and let you look it up yourself?

And after you have answered the questions and explained how to find the information and why you want it, the clerk will go off and get one of the other clerks to help him to find Correggio—and come back and tell you there is no such man.

Now, if you are wise you will not bother to explain to your assistant that Correggio is indexed under the Cs, not in the Ks, but will smile and say, "Never mind," and look it up yourself.

"You see that book-keeper?" said the foreman to me in a large factory.

"Yes; what about him?"

"Well, he's a fine accountant, but if I sent him up to town on an errand he might

accomplish the errand all right, and, on the other hand, might stop at four saloons on the way and forget what he had been sent for."

We have recently been hearing much sympathy expressed for the "down-trodden denizen of the sweat-shop" and the "homeless wanderer searching for honest employment," and with it all often go many hard words for the men in power.

Nothing is said about the employer who grows old before his time in the vain attempt to get ne'er-do-wells to do intelligent work.

I know one man of really brilliant parts who has not the ability to manage a business of his own, and yet who is absolutely worthless to anyone else because he carries with him constantly the insane suspicion that his employer is oppressing or intending to oppress him.

Tonight this man walks the street looking for work, the wind whistling through his threadbare coat.

Have I put the matter too strongly? Possibly I have; but when all the world has gone a-slumming I wish to speak a word of sympathy for the man who, against great odds, has directed the efforts of others, and, having succeeded, finds there is nothing in it; nothing but bare board and clothes. I have carried a dinner pail and worked for a day's wages, and I have also been an employer of labour, and I know there is something to be said on both sides.

There is no excellence in poverty; rags are no recommendation, and all employers are not rapacious and high-handed any more than all poor men are virtuous. My heart goes out to the man who does his work when the "boss" is away as well as when he is at home.

And the man who, when given a letter for Garcia, quietly takes the message without asking any idiotic questions, and with no lurking intention of doing aught else but deliver it, never has to go on strike for higher wages.

Civilisation is one long, anxious search for just such individuals. Anything such a man asks shall be granted. He is wanted in every city, town, and village—in every office, shop, store, and factory.

The world cries out for such; he is needed, and needed badly—the man who can carry a message to Garcia.

THE PHANTOM CATS

THERE was once a Japanese hunter who had strayed far from home in the pursuit of a deer.

At dusk he was passing through the woods which clothed a steep mountain. Very far below he saw lights; but he did not try to reach the village lest in the darkness he should fall over some precipice. However, he saw a ruined temple a little higher up the mountain, and there in a corner he lay down to sleep.

He was suddenly awakened by a terrible din. The moonlight shone through the broken roof and showed him twelve cats, all dancing and yelling, gambolling and shrieking. The most dreadful thing about it was that they were using human words. The hunter understood that they were rejoicing over some feast which would soon take place, and they kept crying, "Tell it not to Shippeitaro!"

At dawn next day the hunter set off for the village below. The first person he met was a little boy who was crying. When the hunter asked what was the matter the child said: "My sister will be given to the demon tonight; my dear Plum Blossom will be torn to pieces by the demon."

"What demon is it who would do this?" asked the huntsman.

"He lives on the mountain. He sends terrible plagues upon us unless we sacrifice a maiden to him each year. It is now our family's turn to give a victim. Plum Blossom will be put in a great box

and carried to the temple on the hill. At midnight he will come to kill her."

The hunter did not say one sympathetic word. He simply asked, "Who is Shippeitaro?"

"He is a big dog belonging to the Prince," said the boy.

The huntsman then made the boy tell him where the Prince lived. Without waiting for breakfast he hurried off to the palace, unfolded his hastily-made plans, and borrowed Shippeitaro. Then he went back again to the village.

It was easy to find the house of the stricken family; a few words from the hunter changed this grief to hope.

At nightfall a party of young men climbed the mountain, carrying a great box. They put it down in the ruined temple, and nothing could persuade them to wait, so great was their terror. But the hunter hid behind a pillar.

Midnight came, and with a horrible miaowing the cats rushed in, led by a huge tom with eyes like live coals. He ran up to the box and seized the lid with his teeth. Out sprang Shippeitaro and caught the monster by his throat. The huntsman ran up to cut off his wicked head. Then man and dog made short work of the other cats, which had been too stupefied with fright to escape.

After that no more demons troubled the district, and Shippeitaro was the best-loved four-footed thing in the place.

THE BOY WHO KEPT BACK AN ARMY

IN the warfare which the French made upon the Tirolese, a people living in the north-east of Italy, the French soldiers attacked a village on the bank of the River Ard. The village could only be reached by crossing a swiftly-flowing river rushing along the bottom of a deep ravine. Across the ravine lay the huge trunk of a tree, which had been cut down on the bank and allowed to fall so that its trunk rested on the farther side, and the tree, therefore, formed a bridge.

Three hundred Tirolese men and a boy guarded the bridge. The boy was Albert Speckbacher. As the French advanced the Tirolese began to hew down the bridge with axes, but the bullets from the rifles of the French soldiers fell thick and fast, and one after another the brave men fell. Among the dead was Albert's father.

The brave boy took his father's place. The bridge was nearly down; a few more strokes of the axe and there would be no way for the French to cross. Seizing an axe, Albert Speckbacher faced the fire from the French guns, and hewed the tree at the peril of his life. He cut it all but through—there was only a thin piece of wood holding the bridge together.

At that moment Albert Speckbacher gave up his life for his people. He threw down his axe and jumped on the tree with such force that his weight snapped the thin piece still holding it in its place, and the bridge and the boy fell together into the swift river below.

The French were stirred by this act of bravery, and they buried the boy's body with honour, and set up a monument to tell how nobly he died.

KATE BARLASS OF THE BROKEN ARM

JAMES THE FIRST of Scotland was a good king; but when he came to the throne, about 500 years ago, the country was in such disorder that he had to be stern and severe; so many of the nobles hated him and conspired to kill him.

It happened that the king went one winter to Perth, with his queen and her ladies, and abode in the Abbey of Perth, while his followers were scattered over the city; and here was the traitors' chance.

To make matters easier, some servants were bribed to remove the bolts and bars from the doors. And so it befell one night, when the king was sitting quite unarmed with the queen and her ladies, that a great clatter of weapons was heard, and he knew his foes had come to murder him.

But as he knew that there was a vault under the chamber where he was, he wrenched up the boards from the floor and leaped down, and the ladies quickly

put them back just before the traitors entered the room. And they, not finding him, searched for him high and low. Then the king and the ladies in the chamber, thinking the danger was over, began to move the boards; but just at that moment they heard the traitors returning. There was no time to cover all up, and on the door was no lock or bolt to stay them—only the iron rings of the bolt.

Quick as thought one of the queen's maidens, Katherine Douglas, sprang to the door and thrust her arm through the rings of the bolt, crying out that there was no one in the room but ladies.

But the fierce men outside paid no heed, and poor Katherine's arm was snapped, and the men burst in and slew the king.

For her brave deed the name of Katherine Douglas found its way throughout the land, and men called her Kate Barlass, the lass who barred the door with her arm.

THE TWO DAUGHTERS OF JAPAN

THERE was once a Japanese sportsman who loved shooting with the bow and arrow. He took no pleasure in shooting at targets, but desired always a living mark.

Now, he had two daughters who were devoted followers of the gentle lord Buddha, whose teaching forbids men to take life except in cases of strict necessity. Their father was, in outward forms, a Buddhist too, but he brushed aside that part of Buddha's teaching which it did not suit him to follow.

The two girls often tried to dissuade him from this disobedience, fearing that Heaven would punish their father's soul in the next world.

One day a friend said to their father: "There are two storks which come every night to the lake beyond my garden. You ought to try to get them."

"I will shoot them tonight," cried the archer. His daughters overheard.

When it was quite dark he set off for the lake, and waited. Before long he saw two white things moving by the shore. Two skilful shots brought them to the ground. He ran up, and saw that he had killed his own daughters. They had taken this way of showing him the sacredness of life.

In his grief and horror he flung away bow and arrows for ever.

THE RACE WITH THE FLOOD

THE most famous engine-driver in America, Hiram Free, has gone on his last ride, but long will his name be remembered. Every American boy knew of his race with the flood which swept away Johnstown, in Pennsylvania.

A huge dam, 700 feet long, held up the waters of the River Conemaugh in a reservoir, twelve miles from Johnstown. The railway ran down the valley and crossed the river by a bridge below the town.

From his engine Hiram Free saw the dam bursting, and a great wall of water, seven yards deep, come rushing down the valley. Putting on full speed, he dashed

down the valley, with the waters tearing up the railway track behind, and his warning whistle gave hundreds of people time to escape. Outrunning the waters, he passed Johnstown and crossed the railway bridge, shrieking the alarm.

The town was almost entirely destroyed by the flood, and so were seven villages lower down the valley, but the railway bridge stood firm.

This terrible accident showed American engineers the need of strong embankments to hold up great reservoirs of water; but most people remember it best by Hiram Free's heroic race for life.

BLUE JAY

ON the north-west coast of America there used to dwell a powerful race of Indians called the Chinooks. As they hollowed out their cedar-tree canoes, or feathered their arrows, they were fond of telling tales, particularly tales of Blue Jay.

Whether Blue Jay was a man, or a bird, or a will o' the wisp no one could say. He seemed to take it in turn to be all three. But, in any shape, it was mischief that delighted him.

One evening when Blue Jay returned from hunting he found that his sister Ioi had disappeared. Blue Jay was incapable of affection; he had never done anything but tease Ioi all her life. But as they had lived alone together, and there was now no one to cook for him, Blue Jay soon missed Ioi very much.

The days passed, and there was still no sign of her. Blue Jay began to wish he had behaved better. He made inquiries; no one knew anything about the missing girl. At length Blue Jay set out himself in search of her.

He wandered far and wide without ever getting news. Then, one day, when he was fishing, his canoe suddenly began to move of its own accord. He was swept swiftly over the sea until he came to a foreign land.

He drew up his canoe, and walked inland till he came to a village. In the biggest lodge he found Ioi surrounded by several heaps of bones.

She greeted him kindly, and then, pointing to the heaps, she said:

"This is my husband, this is my mother-in-law, this is my little brother-in-law, who is kinder than ever you were, Blue Jay. At sunset they will turn into men and women, but at the sound of a loud voice they will become like this again till the next sunset."

She explained that the Shadow People had come when Blue Jay was out, and asked her to marry their chief. She was only too glad to leave her brother, even for a foreign land.

Very soon it became twilight, and Blue Jay found himself surrounded by a crowd of handsome, courteous people, who made him very welcome. But as soon as the merriment was at its height Blue Jay suddenly gave a loud shout. The fine folk disappeared, and there were only heaps of bones to be seen.

Some time after he had returned to his own place a man died, leaving his wife and two children terribly poor. The Shadow People were sorry for them, and used to leave whale meat at the door of their little hut by the creek.

Blue Jay smelt delicious odours coming from the place; he called the other men, and the worthless crew burst in upon the widow, and carried off the meat.

Next day the elder of the two children, a girl, had disappeared.

"The Shadow People have taken her, like Ioi," said Blue Jay. "Let us go and fetch her back!"

So they all set off in their canoes.

They reached a different part of Shadow Land. Not a person was to be seen except the stolen girl, who said she was happily married to one of the Shadow People, and invited them home.

Blue Jay had no sooner got into the house than he complained that he was hungry. Suddenly a queer creature appeared with a long beak. He used this to split wood, and soon a fire was kindled. It began to smoke. Now another queer creature with a huge stomach appeared, and swallowed it all.

A little piece of meat was cooked, but when it was set on the table another creature appeared and began to slice it. It became a canoe-load of meat.

After the guests had eaten the Shadow People challenged them to a diving match; the loser was to be slain.

"I will be the Chinook champion," said Blue Jay.

So he fastened bushes to the side of his canoe, and when he felt he could breathe no more he would come up, hidden by the bushes, and get some fresh air. By this means he seemed to stay under for a remarkable time, and won the match.

Next they had a climbing contest. Blue Jay and a chipmunk were set to climb a piece of ice that reached from the Earth to the clouds. Blue Jay crawled round to the side on which no one was looking, changed himself into a bird, and flew to the top, where he took on his man's form again and was acclaimed victor.

By many other trials of strength and agility did the Shadow People try to get rid of their unwelcome guests, but they were always defeated by Blue Jay's dishonesty. At last the Chinooks returned,

for no one wanted them, and the girl was devoted to her Shadow kin.

Now Blue Jay took a wife, and in time had some children whom he treated as callously as Ioi. Once there was a fearful famine, and the people only had roots and mussels to eat. All the men went out in their canoes to seek food. The chief was dead, but his little son was a spirited boy who desired to serve his people. He begged to go hunting with the men.

"It is too dangerous," said Blue Jay.

The boy clung to his canoe, up to the armpits in water, but Blue Jay struck his hands till he was obliged to leave go.

The men were lucky enough to kill a sealion. They were near a rocky island.

"Let us drag it ashore and cut it up here," said Blue Jay. Then, when that was done, he said: "There is not enough here for all the tribe! We had better eat it ourselves, and say nothing about it."

THE INVENTION OF MEDICINE

IT is all very well to grumble at being dosed: just listen to me a minute, and learn what would have happened if there had been no medicine.

At the beginning of things men and beasts lived together like brothers. But gradually they drifted apart. What was the first little squabble, I wonder, which led to the great separation? Certain it is that men made huts for themselves in clearings, while the animals kept to the woods. Then, one day, when his aged wife was shivering with cold, a man went out with a stone and sling. He came back with the warm skin of an animal. After that there was open war.

The animals met together for counsel. How could they punish these clever wretches who were able to strike down the strongest beast and use its fur to warm their miserable hairless bodies? The animals could not make bows and arrows, hatchets and spears, slings and snares. But they were something of magicians, and so they invented disease.

Before that time there was no such thing as illness. But those angry animals now invented and sent into the world all the sicknesses there are, from measles to lumbago. I do not know who thought of mumps, but it is said that the deer are responsible for rheumatism.

As these fearful curses streamed out into the world it seemed as though the

That evening they returned, and there was a great pattering of feet as the women and children rushed down to hear if they had brought anything back.

"No," said Blue Jay. "You must gather mussels."

This happened again the next day, and the day after. Always the chief's son begged to be taken, and always Blue Jay refused, knowing that the youth would insist on bringing back the kill.

On the fourth day, as they sat at their feast, the men suddenly heard a whirring in the air, and a flock of birds flew round and round overhead uttering cries that almost sounded like human shouts of scorn.

That evening there was no rush of pattering feet when the canoe party returned. The men rushed to their homes. All were deserted. Not one of them ever saw his wife and children again—nor did they deserve that they should do so.

human race must soon be wiped out. But a piece of ivy hung over the mouth of the council cave, and he heard the plot. He crawled away and told it to the oak, who whispered it to the wind, who told the grass and the reeds. The news spread like wild-fire. Now the plants held a council in their turn.

It was in a forest glade. A beech said: "I do not think men should be killed like this. I have a feeling that one day they may do marvellous things. Although they are poor and naked now, I believe that one day they will be as glorious as tigers or pine trees!"

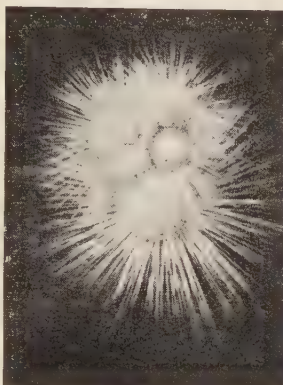
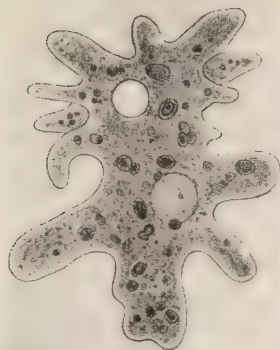
The cowslip said: "Their young ones are almost as pretty as buds. Let us help them against the animals."

Nearly every leaf rustled its approval. One or two plants, such as the deadly nightshade and hemlock, were unfriendly, and the nettle said: "I shall blister them whenever I get the chance!"

But the dock replied: "And I will heal the place!"

Thereupon the plants set out to make remedies for all the diseases invented by the animals. If you look in your botany book you will find that nearly every herb has a medicinal use besides its beauty. If you screw up your face the next time your mother begins to shake the bottle, you are very ungrateful, and you hurt the feelings of the whole vegetable kingdom.

Nature's Wonderful Living Family in Earth and Air and Sea



An Amoeba, Protozoa with spines, and Foraminifera from the Adriatic Sea, seen through the microscope

THE WORLD OF THE PROTOZOA

EVERYWHERE Man can go the Protozoa were there before him and may survive him. Living, they may shape his life; dead, they lift the mountains from the ocean bed, building them on their dead bodies. They are as many as the sands of the sea; as many as the visible stars of the universe; and yet they were unknown to us till on a day three centuries ago a Dutch doorkeeper in Delft, Leeuwenhoek, saw through one of the first microscopes a new world of them in a drop of dirty water.

For these microscopic creatures the name was found, in 1820, of Protozoa, meaning thereby that they were the first created, the most primitive of living animals. This definition of them has not stood the test of time, because, though the vast majority of them have animal characteristics, it is impossible to exclude from among them many which live, temporarily or permanently, after the manner of the vegetable kingdom, and which are plants to all intents and purposes, albeit not descending from the simplest plants in an unbroken series. The term Protista was suggested, so as to unite in one vast assemblage the simple and primitive living things from which the animal and vegetable kingdoms have taken their origin.

By something else we may know these

Protozoa. They have only one living cell. All their life, all their structure, all their development is implicit in it; though even this restriction has to be modified to make room for living creatures which are colonies of single cells, each cell alike to every other. These are the Metazoa, which have been evolved from simpler one-celled ancestors.

The Metazoa are tissue-like animals; the primitive sponges are examples. The resemblances in form and life and living of the Protozoa, and their differences, are so multitudinous that a small Encyclopedia would hardly be enough to enumerate them; but their extremely small size is a quality that all have, and yet is so graduated that while a few can be seen with the naked eye, the majority can be viewed only as Leeuwenhoek saw them under a microscope, and some are all but invisible.

Another quality they have which sets them apart from other living creatures: it is their staggering power of multiplication and its swiftness in action. An elephant requires 25 years to attain maturity and become a parent. A single Protozoan, if no fatal accident attended the lengthening out of the chain, would become the ancestor of a million of its kind in four days. It is this fecundity or

teeming productivity which enables the Protozoa to set their mark on the structure of the Earth.

In the depths of the ocean lie billions upon billions of dead Protozoa—Foraminifera and Radiolaria—which have left their skeletons over vast tracts of the ocean floor as almost the sole constituents of the ooze on which the deep-sea cables rest, and through which the words of men flicker and flutter and beat. The Radiolaria are a group of a great many species, and the same was true in past ages, since in many geological deposits the rocks are constituted of the same materials.

THE MINUTE BODIES WHICH HAVE BUILT UP THE MIGHTY MOUNTAINS

From the Radiolaria and Foraminifera and other forms contributing to their numbers has been built a great part of the solid surface of the Earth's crust. They are the mountain builders. Their bodies rising from the deep have become the limestone rocks of mountain ranges. Their monuments are the Alps and the Carpathians, the Mountains of the Moon in Morocco. Their mausoleums were rising in Egypt millions of years before there was a Pharaoh or any human being; they crowned the heights of Persia before Persia was; and supplied the Miliolite limestones for noble buildings in Paris before there was a France.

This building activity is conferred on them by their ability to add to their number in such a way as to impart to them a restricted immortality. No waiting for them. The single cell splits into two single cells, and these two split again almost as fast as two ticks of a clock. The protozoan *Paramecium*, one of those infusoria that Leeuwenhoek spied through his lens, has been experimentally set going and kept going for some thirty years, always the same *Paramecium* replacing the ancestor, till at last something happens to the life-force and the clock runs down. Otherwise the *Paramecium* progeny might overwhelm the world.

PAYING GUESTS WHO PAY NEXT TO NOTHING FOR THEIR KEEP

After the consideration of the Protozoa as mountain builders comes that of inquiring how their life, while they live, affects the life of the world; that is to say, the existence of the higher animals, those who, like ourselves, have to suffer them.

Let us be fair; they may do us a good turn here and there, but as parasites, a quality in them which first focused attention to their habits, they are paying guests paying next to nothing, and harder to evict than any squatter. They must have food, and in face of their numbers no Food Controller can prevent them. After all the majority nourish themselves as all animals must; that is to say they are entirely dependent for food and sustenance on other living organisms which they capture, devour, and digest.

Such animals, protozoa or other, are said to be "holozoic," a word signifying "completely animal-like"; they are unable to build up the calories they need, and require proteins ready made. A number, assigned to the Mastigophora (from the Greek, *mastix*, a whip) have slender whip-like filaments, or flagella, that enable them to move along and capture food. To this section belong the Trypanosomes, parasites of which there will be more to be said, but nothing to praise.

THE PROTOZOA WHICH CONTAIN CHLOROPHYLL LIKE THAT OF GREAT PLANTS

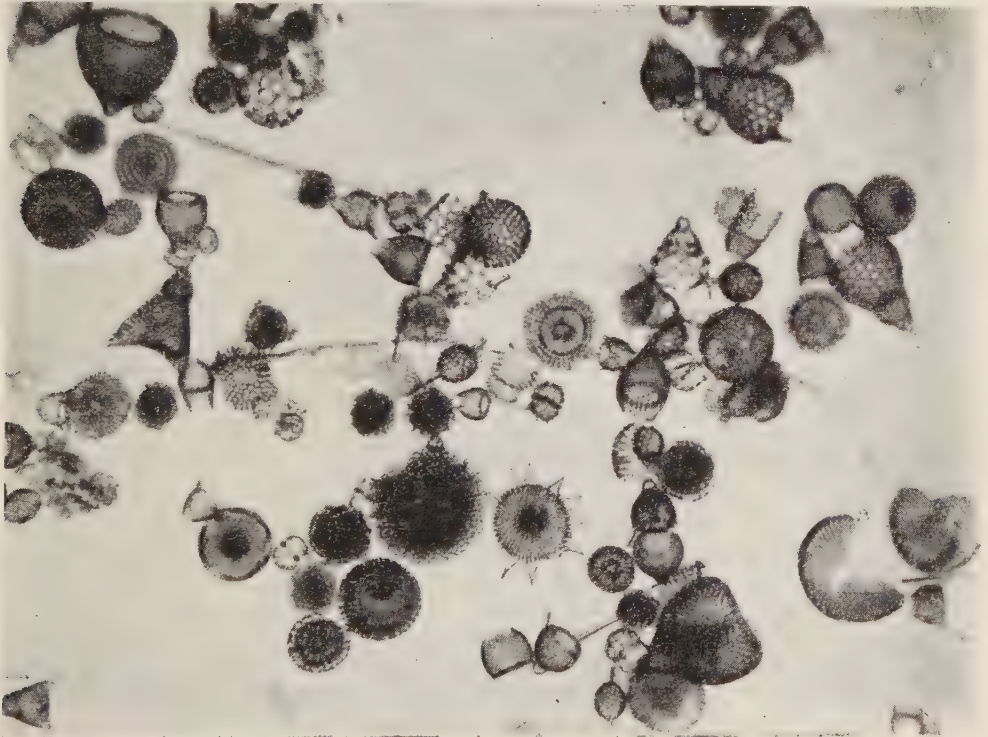
A certain number of Protozoa, all, with rare exceptions, belonging to the class Mastigophora, possess in their bodies peculiar coloured corpuscles, containing chlorophyll like the green chlorophyll of plants, by which in sunlight they can split up carbon dioxide, freeing the oxygen and using the carbon to build up protein. Such are in this way similar to the ordinary green plants, and are called holophytic, meaning "completely plant-like." It was in order to combine the holozoics and the holophytes that the new term Protista was suggested, uniting the vast assemblage of simple and primitive living beings from which the animal and vegetable kingdoms have taken origin.

Some Protozoa that have no such apparatus are spared the need of devouring other creatures, because they live on decaying organic substances they encounter. They are termed saprophytic because their mode of life is like that of the fungus—a saprophyte. They do not need ready-made protein, because they can build it up from other chemical substances as they go. The Flagella free-lancers are of their company.

Among the Mastigophora is a sub-

section comprising a small number of marine forms, of which the best known is the common *Noctiluca miliaris* of our coasts. It is about the size of a pin's-head, but its body, much smaller than that, is inflated with a watery gelatinous substance, from which noctiluca derives its remarkable power of light production, probably the result of oxidation within it. This power reveals itself in warmer seas than ours in magnificent displays of phosphorescence covering at night square miles of ocean, so that a ship sailing in it appears to float on a living floor of light,

become so engrained that in structure it has become a vegetable. Otherwise a parasitic Protozoan is entirely dependent on its particular host or hosts. It may live on or in the host. If outside it may do no harm and may use the host only as offering shelter and transport while looking for a living. On the other hand it may bite the hand that feeds it, as one of the parasites of fishes does by leaving a permanent wound on the skin; and fish are not the only victims, for some human diseases have been attributed to the same insidious penetration.



SILICEOUS SHELLS OF RADIOLARIANS, MINUTE MARINE ANIMALS INVISIBLE TO THE NAKED EYE
This greatly enlarged photograph clearly shows the beautiful structure of the shells of protozoa that is in fact a living floor of billions of noctiluca. The display comes unexpectedly and disappears as suddenly as it comes. Stirring increases it as experiments show.

Finally, Protozoa of all classes live as parasites, at the expense of some other living creature, their willing or unwilling host. This and the varying modes of life are of less value in classifying them because of their differences: all four ways of life and living are to be found in the one order of the Flagellata, and in one subdivision of it the holophytic habit has

The vast majority of parasites that live inside the host are there for no good or useful purpose. If a few offer compensation as house cleaners, the others are like the housebreaker whose presence is alone sufficient to make him suspect. Two modes of parasitism may be distinguished. The parasite may intercept the food of its host and so rob it of its sustenance, but the food robbers are in general harmless otherwise. But the parasites which nourish themselves on the substance of the host may produce the most dangerous effects; and like the Kea, the big New Zealand

parrot which was originally a herbivorous or insect-eating bird and became almost accidentally carnivorous, and began, and continues, to kill sheep for its food, so in protozoan parasites of the hungrier kind is an ascending capacity for harmfulness, culminating in species which bring about the death of their host.

It is far from clear in what way the poisonous effects of parasitic Protozoa are produced. The effect may depend on the host as well as the parasite effecting it. Nor need it depend on the number of the parasites. They may be present in force on an insect and the insect no worse for it, yet on the other hand a large mammal may succumb to the effect of microscopic parasites so scanty in number as hardly to be detected, as when the Trypanosome gambiense kills thousands of native Africans by Sleeping Sickness. It might seem that a specific poison is produced by the parasite, but up to the present scarcely more than one such poison has been isolated.

THE IDEAL HOST FROM THE PARASITE'S POINT OF VIEW

The poison bears the sinister name of Sarcocystis, in one of the Sarcosporidia, and the Sarcosporidia are a section of the Sporozoa. They are very common in domestic animals, and found frequently in Man. They usually damage only by force of numbers, and do not do much harm otherwise. They are visible to the naked eye and often very large. The sheep supports big ones, and the roebuck one nearly one-twentieth of an inch long.

The parasite, one might say, does not seek to kill its host, because by doing so it would deprive itself of visible means of support; the death of the host might be the greatest disaster that could befall itself. The ideal host from the parasite's point of view is one that is tolerant of it, going on imperturbably content with its company. But either before or after it fails them there must be some escape to another host. Active migration can only be effected when the host leads an aquatic life, not when it is a land animal. The way of escape must be one to enable the parasite to find a host elsewhere. There are several such ways and the most complicated is like that of the malarial parasite *Plasmodium malariæ* which spends one part of its life cycle in an insect and the other part in Man where, as surely as a tiger, it may become a man-killer.

The Protozoan parasite, like any single-celled thing, is more or less a minute mass of the living substance protoplasm, containing within it other substances, fluid, solid, even gaseous, which are the product of its own activity or have been taken up from outside. A drop of a fluid substance when suspended in another fluid tends immediately to become a perfect sphere, and this may be regarded as the primary form of a living cell.

THE ENDLESS FANTASTIC SHAPES WHICH THE PROTOZOA ASSUME

A great many Protozoa have this spherical form, especially those which, like the Radiolaria, float freely in water; but the majority depart, for various reasons, more or less from it. A first reason would be that the Protozoan could not maintain it. Thus an amoeba in which the protoplasm is quite naked can keep the spherical form while at rest, but when it becomes active it may assume new appearances, such as that of thrusting out the protoplasm in spines or protuberances varying in size, length, width, and activity. If not wanted they can disappear.

These protuberances—spines, flagella, or whatever form they assume or whatever purpose they serve, whether to aid movement or whip up food—are conspicuous in the endless fantastic shapes the Protozoa assume. Fantastic as some of them are, they have all been evolved in the long eras since life appeared on the planet to serve best the interests of these living parasites if not those of any other creature. This assertion may do the Protozoa something less than justice, for without some of them as scavengers, the life of the world would soon be choked with its own refuse.

PROBLEMS OF CLASSIFICATION WHICH FACE THE SCIENTISTS

The unravelling of the aim and value of these diversities of form is a task that the Protozoologists undertake and must pursue unceasingly; and it has to begin with the tedium of classification. The first classification is that between species which move freely and those that are fixed or attached. Of the freely-moving some float or swim, and some creep along on a firm foundation. The swimmers become egg-shaped, the creepers are more or less flattened and spread over the surface. Sitters, or attachés, are more or less vase-shaped, with an attachment drawn out into a stalk. A frequent peculiarity is

that the Protozoan, whether fixed or free, acquires a spiral twist—though it need not be a vicious spiral.

The second consideration is to discern how the form developed and is maintained, and on what principles. The answer has to be sought in the structure of the individual. The structure may be external like an envelope, or internal like a framework or interior scaffolding. Some of the naked bodies form shells about themselves, others build about themselves walls formed of spicules of sponge; and an experimental zoologist induced one of the *Diffugia* to set up housekeeping with particles of coloured glass.

The *Diffugia* are in fact only a very small item in a system of classification which is not founded on any of these diversities that have been mentioned, nor on others arising out of the physiology, the life cycles, the sex, the tendency or ability to change the shape; but regards only the larger differences in shape or size or the processes of life. The *Diffugia*, for example, are set among the *Sarcodina*, a term derived originally from "sarcode" and employed for the living substance, the "life-stuff," before protoplasm was substituted. The *Sarcodina* are those in which the protoplasmic body is naked, as in the amoeba.

The second ruling class are the *Mastigophora*, or those in which, as already stated, the organs of locomotion and food-capture are the lashing, whip-like flagella. The protoplasmic body may be naked or may have a cortex, or a sort of

bark, as the brain has. The *Trypanosomes* are in this company.

Let us take the *Sporozoa*. These are protozoa occurring always as parasites of other living organisms, and without means of locomotion or of taking food into their stomachs or other digestive apparatus. Reproduction takes place by the formation of seed-like bodies or spores, within which

are one or two minute germs. Spore, from the Greek *sporos*, means a seed, and was at first applied by botanists to its appearance in ferns, but they are not true seeds; but each is merely a single cell in a protective covering. But this single cell encloses a sporozoite, which escapes and, finding a new host, begins to act there with all the vigour of a commando. It absorbs its nutriment through its skin, and may increase its numbers very rapidly.

The *Sporozoa* are a very extensive group, and a vast miscellaneous assemblage of forms that have little in common except the parasitic habit and the ability to perpetuate the race by spores. The most deadly of the spores or sporozoites are those which become parasites of the blood corpuscles, red or white, and destroy them. They

penetrate and destroy the corpuscles of fish, amphibia, and reptiles; occurring among any vertebrate or backboned animals, preferably cold-blooded ones, but not sparing mammals. The intermediate hosts among the mammals are insects which are porters or carriers of the sporozoites; mosquitoes, flies, ticks, and leeches. Respect for these parasites falls to its lowest in considering the



HIGHLY-MAGNIFIED PICTURES OF RADIOLARIA, SHOWING THE DELICACY OF THEIR STRUCTURE

Haemosporidia, the blood-corpuscle devourers.

Of the other main classes, the Sarcodina and Mastigophora are the primitives, comprising the main stock from which the others have been evolved. They are descended from an ancestral type common to both but lost in the abyss of time, and since modified in two divergent directions. The Sarcodina types are those which grow to a large size, many visible to the naked eye. As adults, the permanent organs are wanting and the naked body moves and captures food by thick limbs pushed out from it. The young may be amoeba-like and have thread-like extensions like flagella.

FLAGELLA WHICH STICK OUT LIKE PINS IN A PINCUSHION

The Mastigophora are usually of very small size, and their flagella remain with them while they live. Their bodies are of the amoeba type. They are the pygmies of the Protozoa, but though so minute they are lavishly equipped with flagella. Some, it is true, may have only one flagellum, but in others they abound.

Last but not one of the classifications are the Infusoria. They are fallen from the high estate which they occupied after Leeuwenhoek first espied them, when they had a realm as wide as that of all the Protozoa together, and were simply "animalculae." Now, just as the word "insect" is applied only to the six-legged kind, so the term infusoria has become narrowed to denote only the Infusoria Ciliata, and Suctoria.

The Ciliata are the most abundant and familiar of microscopic forms of life, and in one sense the highest of the Protozoa, since in no other has the body so elaborate a structure, and one so adapted to all the functions of life. The cilia, the slender thread-like protrusions from the body, form a sort of furry covering, though some may be developed to serve, like flagella, for food capture or locomotion. In the sub-class of Suctoria the sedentary adults have no cilia, though in their youth they may be swimmers. The Paramecium is included in the Ciliata.

TINY FORMS WHICH WERE BEYOND THE POWERS OF MICROSCOPES

Changes in the interpretation of these classes are continually made and must be, seeing that the material is on the way to infinity. The Chlamydozoa, which was the last to be admitted as a class by itself

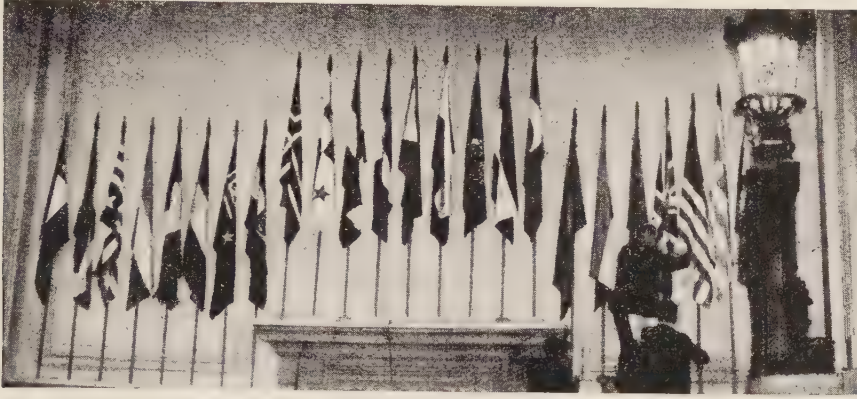
in the earlier years of this century, are now in danger of being displaced altogether. The Chlamydozoa, from the Greek "chlamys," a scarf, were so exceedingly small as either to be microscopic or beyond the powers of the microscope; and though the electron microscope may now reveal them, their structure remains a matter for speculation. It was first proposed to include them among the Protozoa because, as parasites, they were believed to be the causes of certain diseases not produced by visible germs. Among such diseases were vaccinia, trachoma, and others in human beings, and diphtheria in birds; and other diseases afterwards added to the list were hydrophobia, scarlet fever, measles, foot and mouth disease in domestic animals, and a disease of silk-worms.

These diseases will be recognised as those now attributed to viruses. The Chlamydozoa were in those days the first to be named as "filter passers," because they passed through the porcelain filters used in laboratories to filter visible disease germs; and attention was more closely focused on them because they were producers of disease, and no means of preventing them was to be found. That is roughly true of the virus as it is now known and as it remains to be better known. But the parasitic habit which is common to the Chlamydozoa of yesterday and the virus of today establishes a link, and possibly a clue to what the disease poison is and how it acts.

IN ITS DEATH AS IN ITS LIFE THE PARASITE ADDS TO HUMAN KNOWLEDGE

Partly because of the minute size of the virus, measured in millionths of an inch, it became doubted whether it were a living thing at all or whether it was, especially where it produced disease in plants, only a chemical molecule. The conflict is still maintained, but a suggestion made by the foremost defender of the virus as a living entity, is that the parasite, however it may be classed, is one that so degenerated by living on some other living thing that it became so nearly the complete parasite that it could exist in no other way. The body of the parasite shrank in millions of years almost to extinction, but its evil purpose remained. So in its death as in its life, the parasite adds to human knowledge, and that is something attempted, something done by the simplest living thing.

The Story of the Things We See About Us Every Day



NATIONAL FLAGS AND EMBLEMS

STRANGE are the ways of man. In the day of extreme national peril, the thing he prizes most is not his gold, his goods, his land, or his life, but a piece of cloth fluttering from a pole. It is worth a few shillings at most, but millions of men would rather perish than lose it. It is their flag, their national symbol.

In these pages we give in full colour the flags of the nations of the World.

Standards and ensigns, often with flag-like streamers, were used by the ancient peoples of the East, and are referred to in the Bible. But the Red Dragon of Wales is perhaps the oldest surviving standard in the western world. The Romans adopted it from the Parthians, and used it as the ensign of their foreign auxiliaries. The Roman warriors brought it to Britain, and after they left it was often carried into battle to oppose the White Horse of the Saxons.

Of all national flags, the Union Jack is to us the most interesting, and its history is written on its face. Its very name is interesting, for the word Union commemorates the Union of the Crowns of England and Scotland, and the word Jack is a reminder that their common king was James, who signed his name as Jacques.

The Union Jack is made up of three flags—the English flag of St. George, the Scottish flag of St. Andrew, and the Irish flag of St. Patrick.

St. George, who lived about 300 years after Christ, was a heroic soldier who gave up his life rather than deny his faith at the bidding of a Roman emperor. Edward the Third adopted his name as a war-cry and the red cross of St. George on a white ground became the English flag.

St. Andrew was one of the twelve Apostles and was crucified on a cross. Some relics of the Apostle are supposed to have been carried to Scotland, and the white cross of St. Andrew on a blue ground long ago became the national flag of Scotland.

St. Patrick was carried to Ireland as a slave at the beginning of the fifth century. He founded schools and monasteries, and died there a very old man. Many centuries afterward the cross of St. Patrick became the Irish national flag.

The three flags became one by the union of the three countries. In the year 1603 the crowns of England and Scotland were united, and so in 1606 the cross of St. Andrew was added to the cross of St. George as the first Union flag of Great Britain. At the beginning of last century the cross of St. Patrick was added to the Union flag, after the Parliament of Ireland had been united with that of Great Britain.

When we see this flag flying, at home on our public buildings, or at sea on our ships, or in foreign countries at the British embassies, or in far-off parts of the Earth, we

INDUSTRIES · HOW THINGS ARE MADE · WHERE THEY COME FROM

should remember what it means. It is not a flag of war, or of boasting; it stands particularly for the memory of three good and brave men, and it stands generally for us all as a sign that we love freedom, justice, and peace.

HOW THE RED AND WHITE CROSSES CAME TO BE UNITED

The flag has had a curious history as a national banner. The original English flag was white and bore the plain red cross of St. George. Such flags originated on land, but it was at sea that they became significant. To fly the national flag at the mast head was an act of defiance, to lower it was evidence of submission, and to hoist a false flag was dishonourable.

Scotland had then as its own ensign the banner of St. Andrew. Tradition says that when the Picts and Scots were hard pressed by the Saxons they prayed to St. Andrew for help, and, seeing in the blue sky a white cross formed by the clouds, they took this as an answer of victory, rushed into battle and defeated their foes. After the victory they adopted the St. Andrew's cross as their emblem.

When James Stuart came from Scotland to the English throne, a curious difficulty arose. What flag was to be used on the king's ships, common to both countries? English sailors objected to St. Andrew's flag and Scots to St. George's.

THE FIRST STEP IN THE MAKING OF THE UNION JACK

It was decided, therefore, to join the red cross and the white, and this was known as the "Union Flagge," and was to be flown on the main-top. But it was not to supersede the older national emblems, for the proclamation went on to say that "in their fore-toppe all subjects of South Britaine shall weare the Red Crosse onely, as they were wont, and our subjects of North Britaine in their fore-toppe the White Crosse onely."

The Admirals of the Navy, however, soon began to object to merchant ships using the Union flag, their argument being that foreign vessels were never sure which was a king's ship and so might fail to salute. Another proclamation was therefore issued in the time of Charles the First ordering that only naval vessels should fly the Union flag, and that English merchant ships should fly St. George's cross, and Scottish merchant vessels St. Andrew's cross as of old.

After Charles had lost his throne, however, the Union flag was discarded in favour of St. George's. Cromwell did not recognise Scotland, because the Scottish peoples had sided with the Stuarts. But when Charles the Second came back, the people began to use the Union flag, and a proclamation was necessary to remind them that this was the king's jack, not to be used by unauthorised persons. The proclamation seems to have had little effect, however, for the Union flag was still much used, and at last, when the Parliaments of England and Scotland were united in 1707, a new Union Jack was designed to supersede the old flags.

This Union Jack was one of the greatest flags in the world, for it was under it that the British built up their mighty Empire.

It was the flag raised at Plassey when Clive won India, it flew in Nova Scotia and Newfoundland when the French fleur-de-lys was lowered. Under it Wolfe won Quebec, and Nelson the Battle of the Nile.

THE ENSIGN THAT GOES ROUND THE WORLD ON OUR MERCHANT SHIPS

In addition to the Union Jack there are various British ensigns. The Red Ensign is a red flag with a Union Jack in the upper corner, and this is used as a national emblem by all British merchant ships. The White Ensign is a white flag with the St. George's cross and the Union Jack in the upper corner. This is used at sea only by ships of the Royal Navy or by privileged yacht clubs. The Blue Ensign is a blue flag with the Union Jack in the upper corner, and is used only by ships of the Royal Naval Reserve, merchantmen commanded by officers of the Reserve, and certain yacht clubs.

The British Royal Standard, the flag of the king, has gone through many changes. Its heraldry is described on page 4983.

The flag of the United States, though so much more recent than the Union Jack, has an interesting history. When the Colonies resisted the Mother Country, it became necessary to have a flag under which to fight, should fighting be necessary. But the Americans did not want to break away from England if they could get fair treatment, and they designed a flag called the Grand Union, with thirteen stripes of white and red; and in the upper corner they placed the Union Jack.

The arms of Washington's ancestors in England had been made up of stars and

stripes, and later the Union Jack was removed from the top corner and in its place was put, on a blue background, thirteen stars in a circle representing the thirteen original colonies or States.

Later still the flag was changed again, and on the blue background the stars were arranged in rows, a new star being added for every new State admitted to the Union.

The thirteen stripes still remain to represent the original States, but in the Stars and Stripes there are now forty-eight stars to correspond with the forty-eight States composing the Union.

Curiously enough in the upper corner of the Hawaiian flag, the Americans still retain the Union Jack, which thus has the rare distinction of flying over a foreign land.

FLAGS & EMBLEMS OF THE BRITISH COMMONWEALTH

EUROPE

GREAT BRITAIN AND IRELAND. The Union Jack is made up of the three crosses of St. George of England, St. Andrew of Scotland, and of the Irish Geraldines, commonly called the cross of St. Patrick.

CHANNEL ISLANDS. Three lions form the emblem of Jersey and Guernsey, as they formed the Royal Arms of England 700 years ago. Alderney has one lion.

ISLE OF MAN. Three armour-clad legs. An ancient emblem of the Manx people, who borrowed it from the arms of Sicily.

GIBRALTAR. A fortress with arched gateway, under which is a key, standing for the key of the Mediterranean Sea.

MALTA. A blue ensign with a half-red, half-white shield of the old knights of Malta, and a George Cross.

AMERICA

DOMINION OF CANADA. A shield with the arms of England, Scotland, and Ireland, with the lilies of France, and below a sprig of maple.

ONTARIO. A sprig of maple, the floral emblem of Canada, and St. George's Cross.

QUEBEC. Two lilies, which are part of the old flag of France, a British lion, and a sprig of maple.

NEW BRUNSWICK. A British lion, and a ship suggesting the important fisheries.

NOVA SCOTIA. St. Andrew's Cross shown as a blue cross on silver, with a small shield bearing the Royal Arms of Scotland.

PRINCE EDWARD ISLAND. British lion and maple trees.

MANITOBA. St. George's Cross and a bison.

BRITISH COLUMBIA. Union Jack with a crown over a sun.

ALBERTA. The prairie with mountains and ears of wheat, and a St. George's Cross.

SASKATCHEWAN. A lion with three sheaves of wheat.

NEWFOUNDLAND. Symbolical figures with the words "Terra Nova," meaning New Land, and

"Haec tibi dona fero," meaning "I bring these gifts to thee."

BERMUDAS. A red lion holding a shield, with an old ship in a rough sea off a rock-bound coast.

BAHAMAS. The British crown and ships.

BRITISH HONDURAS. A sailing ship, the Union Jack, and a set of woodcutter's tools, to represent the colony's timber.

JAMAICA. Two Indians supporting a shield, with an alligator on the top, and five cones on a St. George's Cross.

BARBADOS. Britannia riding over the waves on two sea horses.

LEEWARD ISLANDS. Ships and pinapples with the Royal Arms.

TURKS AND CAICOS ISLANDS. A ship in full sail off the shore.

SANTA LUCIA. Crossed sugar canes with lilies and roses in quarters.

ST. VINCENT. Justice making an offering to Peace.

GRENADA. A ship sailing toward the island.

WINDWARD ISLAND. British crown on a quartered shield.

TRINIDAD AND TOBAGO. A view of the harbour.

BRITISH GUIANA. A sailing ship, representing produce exported by the colony.

FALKLAND ISLANDS. An ox with a ship off the shore, to represent cattle-breeding.

AFRICA

GAMBIA AND GOLD COAST. An elephant and a palm tree, representing the valuable ivory and palm-oil obtained here.

UNION OF SOUTH AFRICA. Three horizontal stripes of orange, white, and blue. In the centre of the white stripe small representations of the Union Jack, the old Orange Free State flag, and the old Transvaal Vierkleur.

NORTHERN RHODESIA. Eagle over black and white upright waves.

SOUTHERN RHODESIA. A lion and two thistles over a pick.

NYASALAND. A leopard standing on a rock, and the rising sun.

UGANDA. A native bird.

TANGANYIKA. A giraffe's head.

NIGERIA. A crown in triangles.

MAURITIUS. A dodo and a stag supporting a shield.

SEYCHELLES. A tortoise and palm trees.

KENYA. A rampant red lion.

SOMALILAND. The head of the kudu, a beautiful antelope.

ST. HELENA. A rocky island with a sailing ship approaching.

ASIA

CYPRUS. Two British lions.

INDIA. Horizontal stripes of orange, white, and green, with a disc in the centre.

PAKISTAN. A white canton and a white moon and star on a green background.

CEYLON. A golden lion on a red field.

STRAITS SETTLEMENTS. A diamond set with a crown.

BORNEO AND SARAWAK. A red lion represents British North Borneo. Sarawak has a yellow flag with a red-and-black cross and a crown inset.

LABUAN. A ship sailing.

AUSTRALASIA

COMMONWEALTH ENSIGN. The large seven-pointed star of the union (six points representing the six States and the seventh the Commonwealth of Australia) with the star group known as the Southern Cross.

QUEENSLAND. A blue Maltese cross, with the British crown.

NEW SOUTH WALES. St. George's Cross, with a star on each arm, and a lion.

VICTORIA. The white stars of the Southern Cross on a blue sky, with the British crown.

SOUTH AUSTRALIA. A handsome heraldic bird.

WESTERN AUSTRALIA. The black swan found in this country.

FAMILIAR THINGS

TASMANIA. A British lion, with paw and tongue outstretched.

NEW ZEALAND. The stars of the Southern Cross.

Fiji ISLANDS. Natives holding a shield; above, an outrigger.

TONGA. Royal Standard is a red cross in a star in the centre

of a quartered standard with three stars, three clubs, a crown, and a flying bird. The Customs flag has the red cross and the letters H M C for His Majesty's Customs.

RAROTONGA. Three blue stars on a white band on a red ground.

NEW HEBRIDES. A crown inside a wreath.

BRITISH SOLOMON ISLANDS. A crown with the name.

PAPUA. Crown with the name.

GILBERT AND ELLICE ISLANDS.

A crown with the letters B.R. for British residents.

FLAGS OF THE UNITED STATES OF AMERICA

We give below notes on the State flags and arms of America, except where the meaning of the flag is obvious from the picture. The number of stars usually indicates the order in which the State joined the Union.

ALABAMA. A St. Patrick's Cross.

ARIZONA. This is the flag of the battleship Arizona.

CALIFORNIA. The famous bear flag of the American settlers who revolted against Mexico.

COLORADO. The red C is the initial of the name of the State, and the golden disc is the Sun.

CONNECTICUT. The three grape vines represent the three original colonies of the State.

DELAWARE. A sheaf of wheat and an ear of corn with an ox below, a ship in full sail for crest, and a husbandman and rifleman.

FLORIDA. An Indian woman scattering flowers, with the Sun's rays and a highland, a coconut tree, and a steamboat.

GEORGIA. An arch labelled Constitution is upheld by three pillars of Government. Under the arch is an armed defender.

IDAHO. The circle enclosing a shield shows the Snake River with mountains. The supporters are a miner with pick and shovel, and a woman with scales and torch of Liberty.

ILLINOIS. The scroll in the beak bears the motto, "State Sovereignty—National Union."

INDIANA. The 13 outer stars represent the original 13 States of the Union; the other 5 stars represent the 5 States admitted to the Union before Indiana.

IOWA. A flying eagle with the motto, "Our liberties we prize and our rights we will maintain."

KANSAS. A prairie with buffalo pursued by Indians, a cabin, a river with a steamboat.

KENTUCKY. Two men shaking hands, in a circle with the motto, "United we stand, divided we fall."

LOUISIANA. A pelican protecting her nest and feeding her young; with the motto, "Union, Justice, and Confidence."

MAINE. A shield with a pine tree and a moose lying at its foot, and the motto "I direct."

MARYLAND. The escutcheon of Lord Baltimore, to whom a patent was issued in 1632 to found a colony there.

MASSACHUSETTS. An Indian holding a bow and arrow, and in the upper corner a silver star. The crest is a wreath with a hand and sword.

MICHIGAN. A shield bearing a hunter, with the rising sun, supported by an elk and a moose.

MINNESOTA. The Falls of St. Anthony in the background, a pioneer ploughing, an Indian fleeing toward the setting sun, the whole surrounded by a scroll.

MISSISSIPPI. The Confederate battle flag with blue, white, and red stripes.

MISSOURI. A grizzly bear, a crescent, and the arms of U.S.A., with a helmet supporting a cloud for a crest, and two bears.

MONTANA. The sun setting behind the mountains, and a plough, pick, and spade.

NEBRASKA. A steamboat ascending the Missouri River, a smith, a settler's cabin and wheat sheaves, and a train.

NEVADA. A star with two sprigs of sagebrush below, and above a scroll with the motto "Battle born."

NEW HAMPSHIRE. A rising sun with a ship on the stocks, and the American flag flying.

NEW JERSEY. Three ploughs on a shield with figures of Liberty and Prosperity. The horse is suggestive of stock-raising.

NEW MEXICO. The ancient Zia Sun symbol in red on the yellow of old Spain.

NEW YORK. Vessels in the Hudson River, with a rising sun at the back and the eagle on a globe, with Liberty and Justice.

NORTH CAROLINA. Scrolls giving the date of independence, and of victory over the English.

OHIO. The O is the initial of the name of the State. The red disc inside represents the Sun.

OKLAHOMA. A Red Indian rawhide shield with pendant feathers, a pipe of peace, and an olive branch.

OREGON. A landscape with an emigrant wagon and a deer, and at the back the sea with a steamship and a brig. Below is a scroll with the words "The Union," and a plough, rake, and pick.

PENNSYLVANIA. A ship in full sail, two ploughs, and sheaves of wheat, a bald eagle, and two harnessed horses.

RHODE ISLAND. A gold anchor and a blue ribbon with the motto "Hope," and 13 golden stars in a circle, representing the original 13 States of the Union.

SOUTH CAROLINA. A white palmetto typical of the State.

TEXAS. A single white star commemorates the name of The Lone Star State, the pet name of the old republic of Texas.

UTAH. A beehive suggesting industry, and sego lilies, which are common in the State.

VERMONT. A green landscape with a red cow, yellow sheaves, and a tall pine. At the back are the mountains of the State.

VIRGINIA. Virtus, the genius of the Commonwealth, dressed as an Amazon, treading on Tyranny.

WASHINGTON. On the green field is Washington's portrait.

WEST VIRGINIA. An ivy-clad rock, the date of the State's foundation, a farmer with plough and axe, a miner with his pick. Below are two rifles crossed and a cap of Liberty.

WISCONSIN. A shield supported by a sailor and miner, containing the U.S.A. arms in a scroll, an anchor, a workman's hand with a hammer, a spade and pickaxe crossed, and a plough.

WYOMING. A bison.

HAWAII. The Union Jack in the corner is a relic of the first flag of the United States, and is the only flag now flying over the United States soil which retains the British emblem.

1000 FLAGS OF THE WORLD

BRITISH COMMONWEALTH & EMPIRE



LION'S FLAG



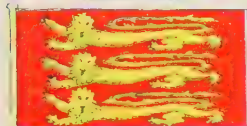
WHITE ENSIGN—NAVY



BLUE ENSIGN—NAVY RESERVE



RED ENSIGN—MERCHANT



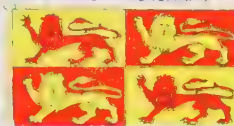
STANDARD OF ENGLAND



STANDARD OF SCOTLAND



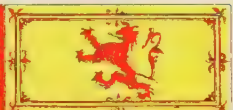
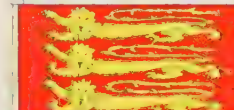
STANDARD OF IRELAND



STANDARD OF WALES



ST. GEORGE'S CROSS ENGLAND



ROYAL STANDARD



ST. PATRICK'S CROSS, IRELAND



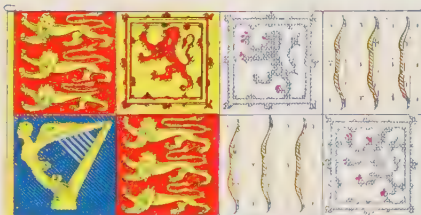
ST. ANDREW'S CROSS SCOTLAND



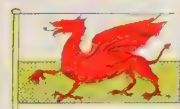
ADMIRALTY



STANDARD OF PRINCESS ELIZABETH



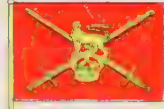
STANDARD OF QUEEN ELIZABETH



WELSH DRAGON



STANDARD OF THE DUKE OF GLOUCESTER



ARMY



ADMIRAL'S FLAG



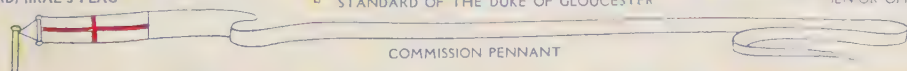
VICE-ADMIRAL



REAR ADMIRAL



COMMODORE OR SENIOR OFFICER



COMMISSION PENNANT



CANADA



AUSTRALIA



NEW ZEALAND



SOUTH AFRICA



CANADA—MERCHANT



AUSTRALIA—MERCHANT



NEW ZEALAND—MERCHANT



SOUTH AFRICA—MERCHANT



GOVERNOR OF
NORTHERN IRELAND



LODS LIEUTENANT
OF COUNTIES



DIPLOMATIC OFFICIALS



ARMY COUNCIL



CONSULS ASHORE



CONSULS AFLOAT



GENERAL OFFICERS AFLOAT



OTHER RANKS AFLOAT



NAVAL ORDNANCE



WAR OFFICE ORDNANCE



ADMIRALTY VESSELS



WAR OFFICE ENGINEERS



CUSTOMS



BOARD OF TRADE



POST OFFICE



FISHERY RESEARCH



FISHERIES BOARD,
SCOTLAND



COMMISSIONERS OF
NORTHERN LIGHTHOUSES



NORTHERN LIGHTHOUSE
FLAG



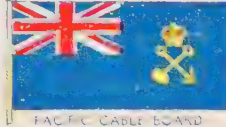
COMMISSIONERS OF
S.M. LIGHTS



CINQUE PORTS



KING'S HARBOURMASTER



PACIFIC CABLE BOARD



LYDD'S SIGNAL STATIONS



ROYAL MAIL



CUSTOMS
COMMISSIONERS



PORT OF LONDON
AUTHORITY



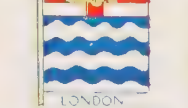
NORTH SEA
FISHERIES GUARD



LYDD'S BURGE



CITY OF LONDON



LONDON
COUNTY COUNCIL



THAMES CONSERVANCY



HUMBER CONSERVANCY



MERSEY DOCK
BOARD



ISLE OF MAN



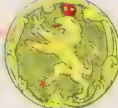
JERSEY



GUERNSEY



POSITION OF BADGE



ALDERNEY



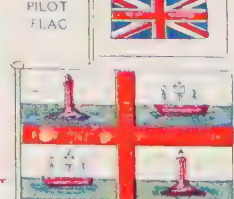
GIBRALTAR



MALTA G.C.



TRINITY HOUSE ENSIGN



IRISH LIGHTHOUSES



TRINITY HOUSE—MASTER'S FLAG

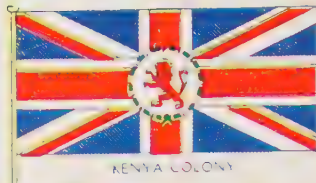




SOUTHERN RHODESIA



GOVERNOR GENERAL, SOUTH AFRICA



KENYA COLONY



ZANZIBAR
BRITISH
RESIDENT



GAME A



NORTHERN
RHODESIA



GOLD
COAST



S.A.H.C.
HIGH
COMMISSIONER
SOUTH
AFRICA



KENYA



SIERRA LEONE



NI-PIA



NYASALAND



BADGE FOR
MISSION AND
MERCHANT



LUANDA



ST. HELENA



BRITISH CIVIL AIR ENSIGN



EDINBURGH



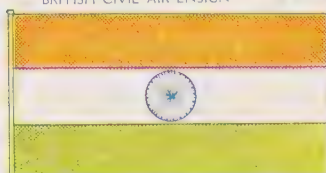
LISBON



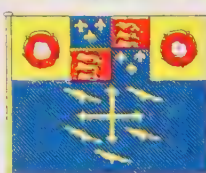
BELFAST



RAF ENSIGN



INDIA



WESTMINSTER ABBEY



PAKISTAN

BRITISH HISTORICAL FLAGS

ROYAL STANDARDS



GONFANON
AND
RELIGIOUS
FLAG OF
WILLIAM I
1066



EDWARD THE CONFESSOR
(POSTHUMOUS)



RICHARD I.
1189



RICHARD I.
1194



ST. GEORGE
RICHARD I. 1194



ST. ANDREW
ANCIENT SCOTTISH



EDWARD IV TO
HENRY IV. 1340-1405



HENRY IV TO
ELIZABETH 1405-1460



DUKE OF LANCASTER'S STANDARD



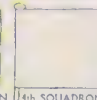
1st SQUADRON



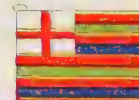
2nd SQUADRON



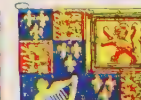
3rd SQUADRON



4th SQUADRON



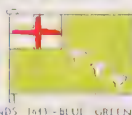
ENSIGN, JAMES I
1615



STANDARD OF
THE STUART KINGS



LONDON TRAINED BANDS, 1643-BLUE GREEN & YELLOW REGIMENTS



COMMONWEALTH
1653



ADMIRAL 1653



COMMONWEALTH
ENSIGN



CROMWELL'S
GREAT UNION



IRISH ENSIGN, 1686



UNION JACK OF
ANNE, 1702



WILLIAM III (ON LANDING) 1688

FLAGS OF THE UNITED STATES OF AMERICA



NATIONAL FLAG & ENSIGN



FLAG OF THE PRESIDENT



SECRETARY OF WAR



ASSISTANT SECRETARY TREASURY



SECRETARY OF STATE



SECRETARY OF COMMERCE



ADMIRAL JUNIOR



VICE ADMIRAL



JACK



REAR ADMIRAL



COMMODORE



SENIOR OFFICER



NAVAL ARTILLERY ASHORE



NAVAL INFANTRY ASHORE



NAVAL MILITIA



LIEUT. GENERAL



MAJOR-GENERAL



BRIGADIER GENERAL



CONSULS



CAVALRY STANDARD



FIELD ARTILLERY STANDARD



MOUNTED ENGINEERS STANDARD



SIGNAL CORPS STANDARD



CHIEF OF STAFF COLOURS



INFANTRY COLOURS



COAST ARTILLERY COLOURS



ENGINEERS COLOURS



TRANSPORT SERVICE



SEMI-MILITARY DEFECT



NAVAL RESERVE



ORDNANCE VESSELS



ENGINEER VESSELS



ASSISTANT SECRETARY NAVY



ASSISTANT SECRETARY COMMERCE



MARINE CORPS



MAJOR-GENERAL MARINES



BRIGADIER-GENERAL MARINES



ARTILLERY DISTRICT COMMANDER



COMMISSIONER OF NAVIGATION



BUREAU OF NAVIGATION



COMMISSIONER OF FISHERIES



BUREAU OF FISHERIES



COMMISSIONER OF LIGHTHOUSES



BUREAU OF LIGHTHOUSES



PUBLIC HEALTH SERVICE



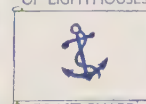
SURGEON-GENERAL PUBLIC HEALTH



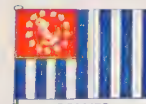
COAST-GUARD



COAST-GUARD JACK



COAST-GUARD ANCHORAGE



POWER SQUADRONS



CUSTOMS



SUPERINTENDENT COAST SURVEY



COMMODORE NAVAL MILITIA



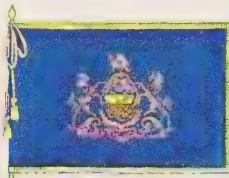
COAST SURVEY



YACHT ENSIGN



DELAWARE



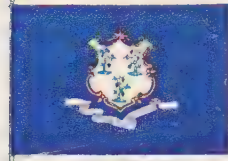
PENNSYLVANIA



NEW JERSEY



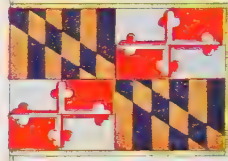
GEORGIA



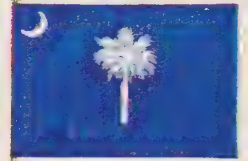
CONNECTICUT



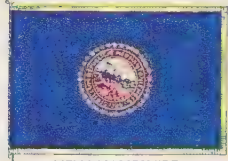
MASSACHUSETTS



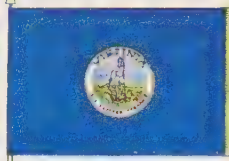
MARYLAND



SOUTH CAROLINA



NEW HAMPSHIRE



VIRGINIA



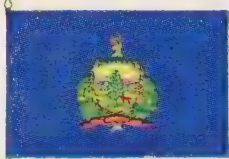
NEW YORK



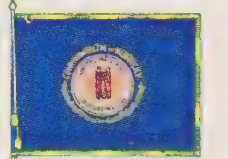
NORTH CAROLINA



RHODE ISLAND



VERMONT



KENTUCKY



TENNESSEE



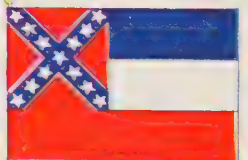
OHIO



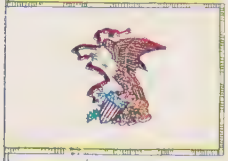
LOUISIANA



INDIANA



MISSISSIPPI



ILLINOIS



ALABAMA



MAINE



MISSOURI



ARKANSAS



MICHIGAN



FLORIDA



TEXAS



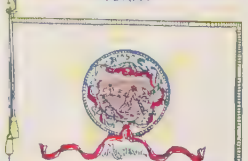
IOWA



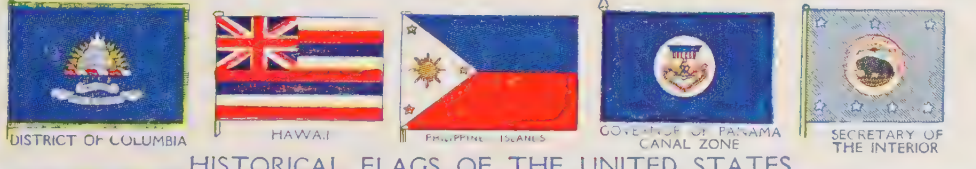
WISCONSIN



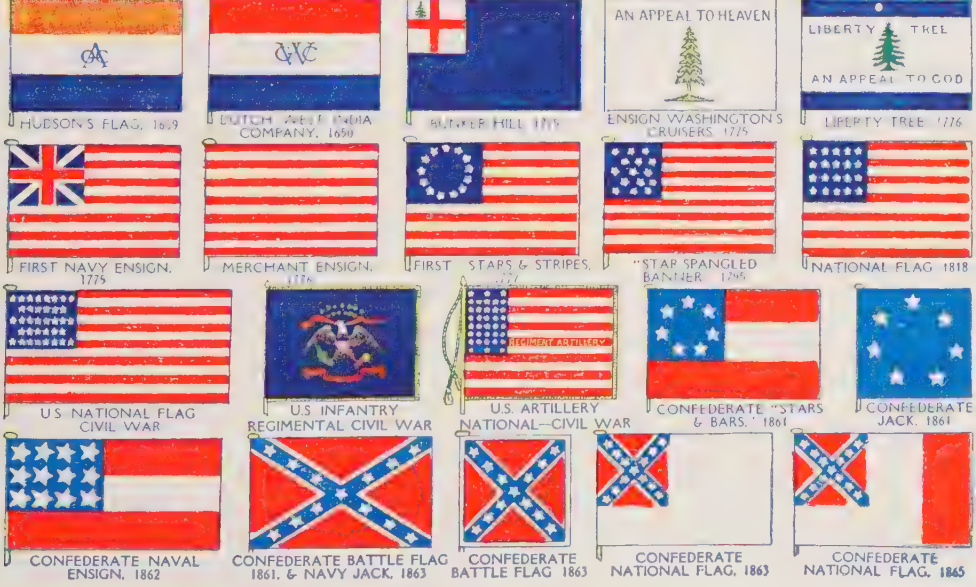
CALIFORNIA



MINNESOTA

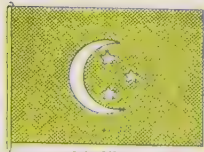


HISTORICAL FLAGS OF THE UNITED STATES



FLAGS OF MANY NATIONS ARRANGED ALPHABETICALLY





EGYPT



ETHIOPIA



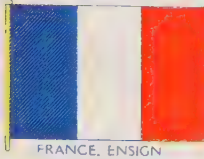
FINLAND NATIONAL



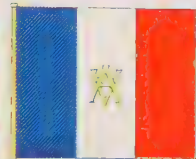
FINLAND PRESIDENT



FINLAND MERCHANT



FRANCE, ENSIGN AND MERCHANT



FRANCE, PRESIDENT'S FLAG WITH MONOGRAM



FRANCE HARBOUR POLICE



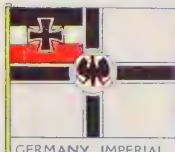
RESIDENTS OF COLONIES



MINISTER OF MARINE



VICE ADMIRAL



GERMANY, IMPERIAL



REPUBLIC



NAZI (NATIONAL SOCIALIST)



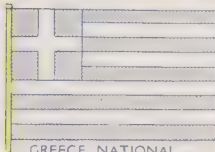
FRANCE COLONIAL GOVERNORS



CHIEF OF GENERAL STAFF



REAR-ADMIRAL



GREECE NATIONAL



GREECE GENERAL



HUNGARY



HAITI, ENSIGN



HAITI, MERCHANT



ADMIRAL



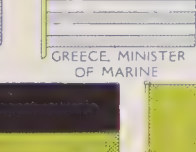
VICE ADMIRAL



REAR ADMIRAL



GREECE JACK



GREECE, MINISTER OF MARINE



ISRAEL



ITALY, PILOT



HONDURAS, ENSIGN



HONDURAS, MERCHANT



ITALY ADMIRAL



VICE-ADMIRAL



REAR-ADMIRAL



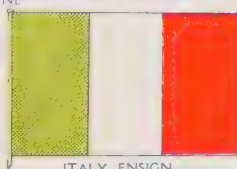
ITALY, GENERAL



LIEUT-GENERAL



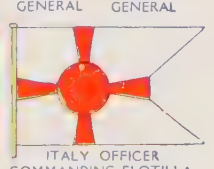
HEDJAZ



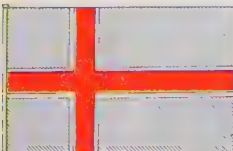
ITALY, ENSIGN



ITALY, MERCHANT



ITALY OFFICER COMMANDING FLOTILLA



ICELAND, NATIONAL AND MERCHANT



ICELAND ENSIGN



ITALY, JACK



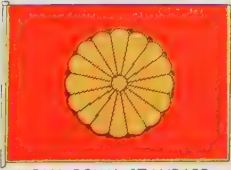
ITALY, AMBASSADOR



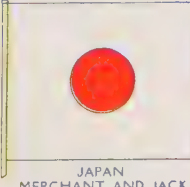
ITALY, MINISTER



IRAQ



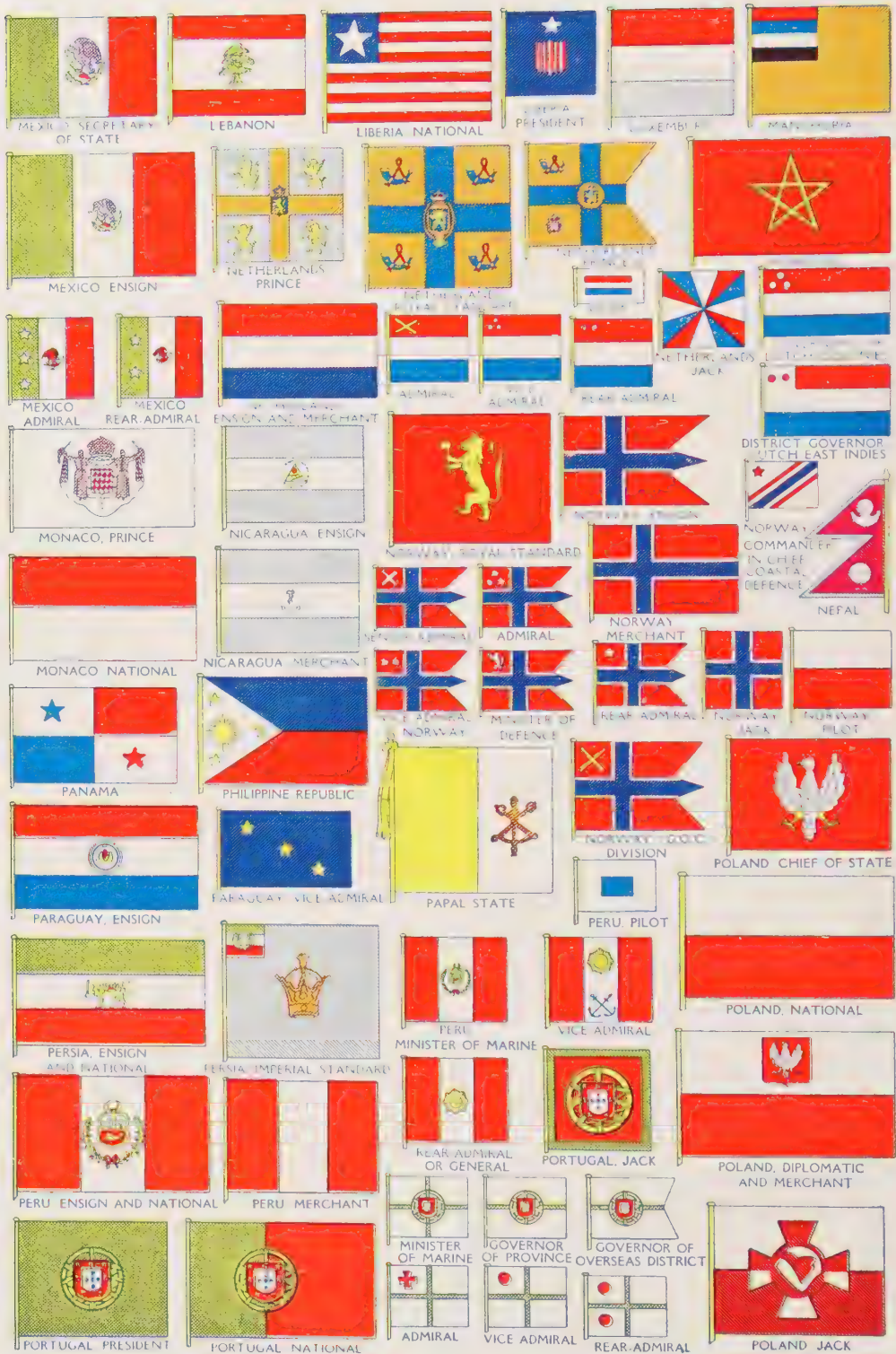
JAPAN ROYAL STANDARD

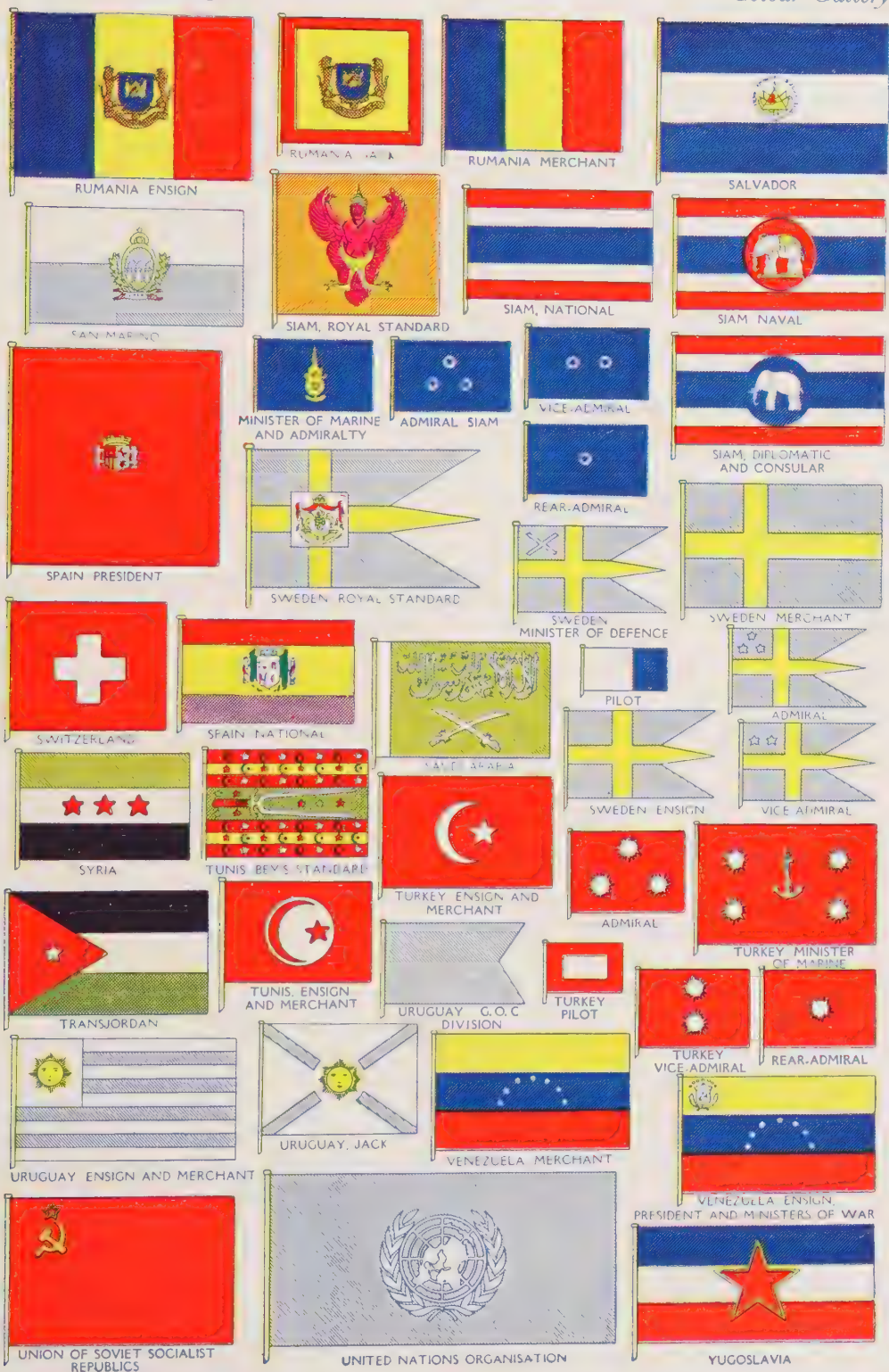


JAPAN MERCHANT AND JACK



JAPAN, MAILS

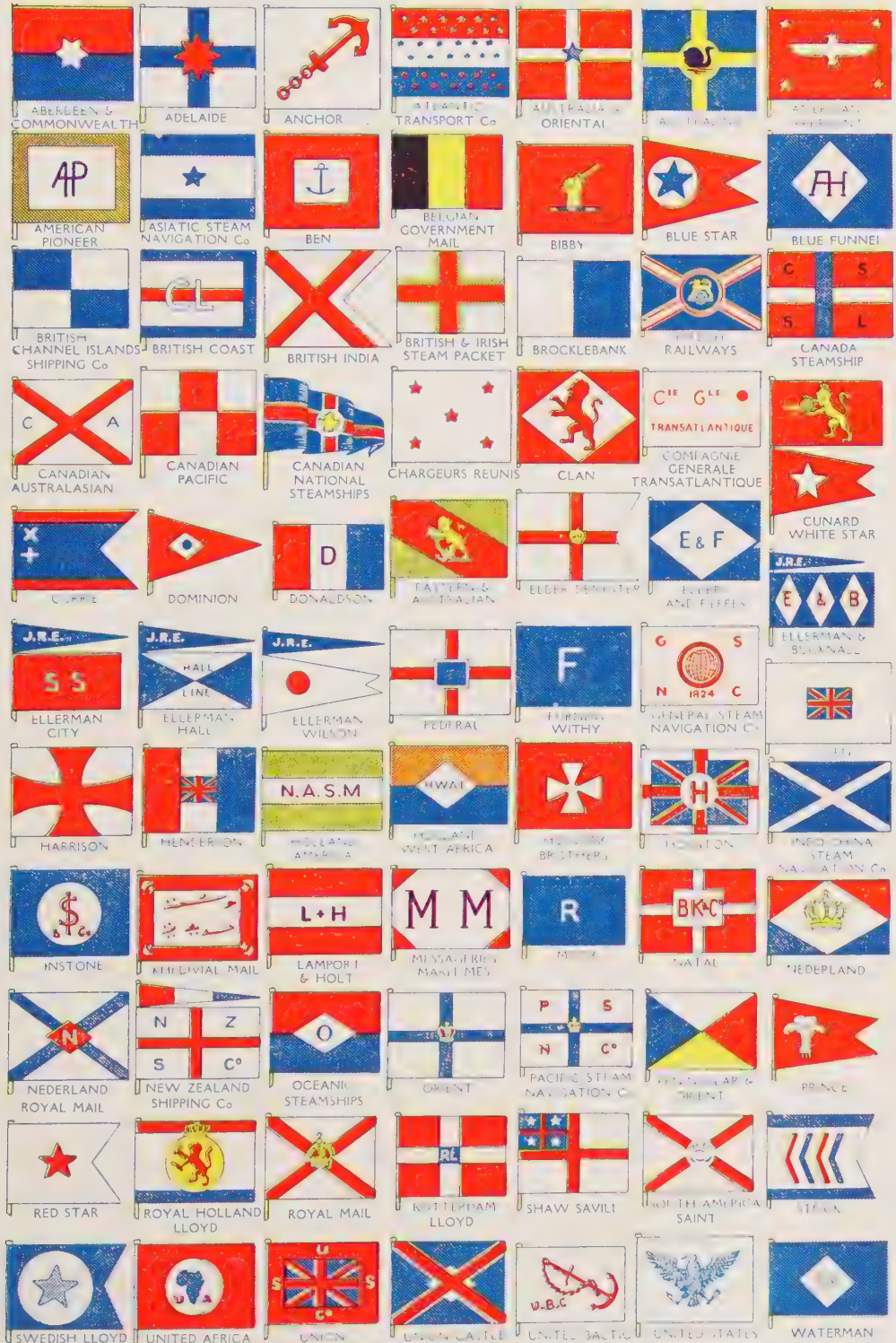




FLAGS OF THE YACHT CLUBS OF THE WORLD



OCEAN FLAGS OF FAMOUS STEAMSHIP LINES



HISTORICAL FLAGS—FOURTEENTH CENTURY



These flags of the world in the middle of the fourteenth century are adapted from a contemporary manuscript written and illustrated by a Franciscan friar of Spain who had travelled widely.

SEVENTEENTH AND EIGHTEENTH CENTURIES



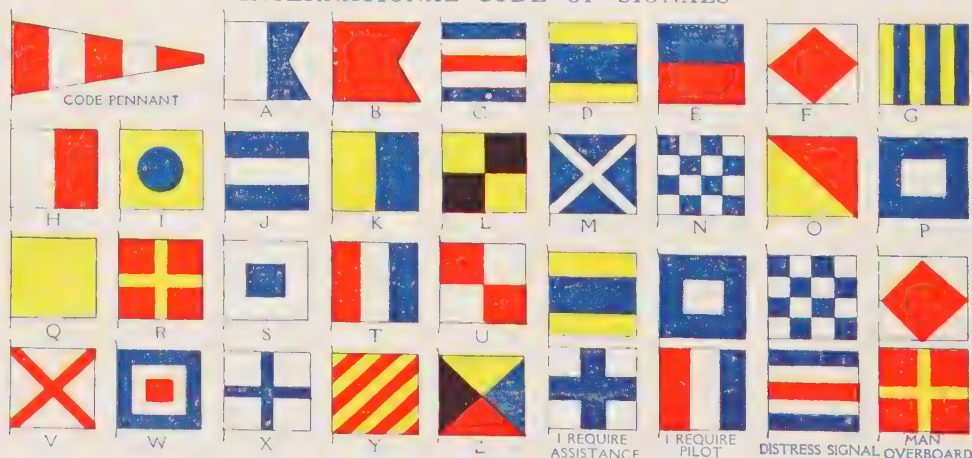
The collection of flags on this page first appeared in an old book printed more than 200 years ago. Colour-printing not having then begun, the colours were indicated by initial letters.

FLAGS OF OTHER DAYS THAT ARE NO LONGER FLOWN



The historical flags shown above, most of which were flown when our century began, became obsolete largely through changes due to the First World War

INTERNATIONAL CODE OF SIGNALS



MARKS ON MILITARY PLANES



Plain Answers to the Questions of the Children of the World

Let the thick curtain fall; I better know than all
How little I have gained, how vast the unattained.

Others shall sing the song, others shall right the wrong,
Finish what I begin, and all I fail of win.

What matter I or they? Mine or another's day,
So the right word be said, and life the sweeter made?

Whittier

MUST ALL THINGS END ?

ALL things do not end. The Preacher wrote long ago that there was no new thing under the Sun, and yet it is very difficult to say what really does end and what does not.

We can think in a moment of a hundred things that do end—such as, say, a piece of string, a stick, a fire that dies out, a river, or a race. These have the sort of ending that we can see with our eyes. We can think in a moment of a hundred things that end *for us*—such as, for example, a storm, which comes to an end as far as we are concerned, though we cannot say that the rain really ends, because the storm may have gone somewhere else. Or we may be watching a ship pass at sea, and the beautiful sight may come to an end because the ship passes from our view; but the vision is ended only for us, because, of course, others may watch the ship from beyond where we happen to be.

There are other things which we may allow to end or not, as the case may be, because we can control them. There are many cruel things in the world which men might bring to an end if they would, such as bull-fighting in Spain, or forced labour camps, or even war. Men could stop these things if they would, as they can stop the running of an engine or the ticking of a watch.

A clock has been made which is expected to run for ten thousand years, so that we might think that that clock, at

any rate, has no end. We may be sure, however, that the stuff of which the clock is made will crumble away in less than ten thousand years, and that brings us to what this question really means. For are we to say that when the clock no longer tells the time it is ended? We know that nothing can be utterly destroyed, and so we know, therefore, that nothing can be utterly ended. *But the form and shape of everything that we can see or handle may end.*

The stuff of which the clock is made may crumble; but, though it is no more a clock, it is still stuff of another kind which we may call dust; and no doubt it might change, in millions and millions of years, through the action of natural forces that are always at work, into stuff of which another clock might be made. And so, of course, if a clock can end as a clock, the wall on which it hangs may end as a wall; the house which the wall supports may cease to be a house; the street in which the house stands may cease to be a street; the town through which the street runs may cease to be a town; and the very Earth itself may cease to be *as we know it now*.

After all, the Earth has not always been as it is today. As Tennyson says:

There rolls the deep where grew the tree,
O Earth, what changes hast thou seen!

There where the long street roars hath been
The stillness of the central sea.

But, although man has not yet learned all that he has to learn, everything that

FIRE · WIND · WATER · LIFE · MIND · SLEEP · HOW · WHY · WHERE

man does know tells us in the plainest possible words that the Earth can never be destroyed, however much its form may change. We speak of a thing wearing away, but nothing really wears away; its form changes, that is all. So that what comes to an end is not a thing itself, but the form of a thing.

This book may end, in the form in which we hold it in our hands; but the thoughts this book has put into our minds, the feelings that have grown in our hearts as we have read it, will remain and influence our lives. And we, in turn, will influence the lives of our successors. Of one thing let us be sure for ever—that goodness never ends, that all this beautiful world, this wonderful life of ours, was not created by God to exist for a few years and then to die. The changes of Nature are sometimes more than we can understand, and the last change that we know, the sleep that we call death, is the strangest of all. But it is a sleep, and not an end.

What is the Biggest Single Thing in the Universe ?

Astronomers down the ages have given many estimates of the size of the universe. How vast it is may be gathered from the fact that, not satisfied with the 100-inch telescope on Mount Wilson, astronomers have constructed and set up on Mount Palomar in California a 200-inch telescope. This huge instrument will penetrate 1000 million light years into space and therefore be able to reveal objects within a circle which has a diameter of more than 11,500,000,000,000,000,000 miles.

Now in this universe the biggest single thing must be the greatest of the nebulae, though which this is we are at present unable to say owing to the possibility of new discoveries. These nebulae, which appear in the sky as hazy patches of light, are vast masses of cosmic dust and light gases. Even if the great nebula in Orion were no farther away from us than the nearest fixed star, it would cover an expanse many times as great as the diameter of our whole Solar system, which is about 7000 million miles wide. But as the gaseous nebulae are more distant than the nearest stars, while the spiral nebulae are beyond the Galactic universe, their size must be inconceivable.

Apart from them the biggest object in the universe is the giant star Antares,

which has been found to have a diameter of between 360 and 420 million miles, as against our own Sun's diameter of only 866,000 miles. The Earth's orbit round the Sun is 186 million miles in diameter, so that the Sun could be placed in the very centre of Antares, and the Earth could revolve round in its present orbit, and there would still be 120 million miles all round this orbit inside the giant star. Or, to put it in another way, two orbits such as the Earth's path round the Sun could be placed side by side inside Antares.

What is a Hall Mark ?

Many of us have in our homes treasured articles of gold or silver which, we have often heard the grown-ups say, are "genuine"; you can see the hall mark on it," and we may have wondered just what those tiny marks stamped on the article have to do with its value.

The term hall mark comes from Goldsmith's Hall in London, where, since ancient times, gold and silver articles have been tested and stamped. There are six other Assay Offices in the British Isles—at Birmingham, Chester, Sheffield, Edinburgh, Glasgow, and Dublin.

A silver article that has been tested in London bears a leopard's head, which was first used when King Edward III in 1300 introduced the testing for their quality of gold and silver articles. It is now called the Town Mark for London, articles tested at the Assay Offices in the other places having different Town Marks.

Since 1363 every maker of gold and silver articles has put his own mark beside the King's Mark. In 1478 another, now called the Date Mark, was introduced. It is a letter indicating the year in which the assay was made.

About 1544 the Lion Passant was added to satisfy the public that articles were not being made of coins melted down—the coinage having been debased by Henry VIII ! This is now the standard mark for silver.

Gold articles do not bear the lion, but have figures showing the carat standard of the metal. These are: 22 carat, shown with a crown; 18 carat, also with a crown; 14 carat, with the decimal 585; and 9 carat, with the decimal 375. The last two standards have no crown.

Down the centuries articles so stamped have been recognised as beyond suspicion.

What are Logarithms ?

Logarithms are a series of numbers representing, or used in the place of, other numbers. They make it possible for long and tedious calculations to be done with great rapidity by substituting the addition and subtraction of logarithms for the multiplying and dividing of the numbers they represent.

They are an invention of the time of Shakespeare, and we owe them to John Napier, Baron of Merchiston, near Edinburgh. Used in all the higher calculations of advanced mathematics, they are of inestimable value, for without them few of the great and marvellous discoveries of modern astronomy or physics could have been made.

Logarithms are partly a discovery and partly an invention. Napier arranged a series of numbers in *geometrical progression*, which he called anti-logarithms, and then, corresponding to them, a series of numbers in *arithmetical progression*, these being called logarithms; and he found that by adding together two logarithms the result was the *logarithm of the product of two anti-logarithms* represented by the logarithms.

A series of numbers is said to be in geometrical progression when each is derived from the preceding number by multiplying by a constant factor. Thus 2 6 18 54 162 and so on, are in geometrical progression because 6 is 2 multiplied by 3, 18 is 6 multiplied by 3, 54 is 18 multiplied by 3, and so on. A series of numbers is said to be in arithmetical progression when the numbers increase or decrease by a common difference, as in 1 3 5 7 9 11 13.

Now, if we take a series of figures in geometrical progression, and place under it a series in arithmetical progression, we have a simple set of anti-logarithms and logarithms, thus :

1	2	4	8	16	32	64	128	256
0	1	2	3	4	5	6	7	8

Suppose we now wish to multiply 32 by 8. Instead of doing this in the ordinary way, we add together the logarithms of those numbers, found in the bottom line, 5 and 3, which give 8, and then we look for 8 in the table and find that its anti-logarithm in the upper line is 256, which is the product of 32 multiplied by 8. Of course for such small and simple calculations we do not need logarithms, but when

dealing with large numbers the amount of time saved by Napier's invention is incalculable.

The logarithms, as originally invented by Napier in 1614, were soon improved, he himself having much to do with the improvements. Any base may be taken from which to work out a table of logarithms, but for convenience 10 is used, and the logarithm of 10 is 1. Then the logarithm of 100 is 2, of 1000 is 3, and so on. The logarithm of 1 is 0, and obviously any number between 1 and 10 must have for its logarithm a number between 0 and 1.

It must be understood that the logarithms of most numbers have decimal fractions which cannot be represented completely, and so an approximate value is found by working out the logarithms to several decimal places. There are tables of logarithms worked out to four figures, five figures, and so on, the extra figures giving greater accuracy, but being more difficult and complicated to use. Thus the logarithm of 200 to five places of decimals is 2.30103.

This brief description of logarithms simply shows the principle of this astonishing invention, but, as used in higher mathematics, logarithms are very complicated and too difficult to explain here. All kinds of calculations, besides multiplication and division, can be worked out by logarithms. The word itself is made up from two Greek words and means the *number of the ratios*.

What is a Synod ?

Sometimes we read of people attending a Synod and we wonder what it is. The word comes from Greek and means an assembly, and it is a meeting of churchmen to discuss all sorts of affairs to do with their Church.

In the early days of the Christian Church there would be a universal Synod, or Oecumenical Council, to which all the world bishops were summoned. We come across the word Synod again today in the expression the full Synod of the Convocation of Canterbury. Convocation means to call together, and is the word used for the assemblies of the clergy of the Church of England. There is a Convocation of Canterbury and a Convocation of York.

Can We Drink Sea Water ?

We can, of course, drink sea water if it has been distilled, that is, if it has been boiled and the steam from it cooled into liquid. But there is another way by which salt water can be turned into fresh, and that is by mixing with it a mineral called silver zeolite.

This method was developed during the Second World War for the benefit of thirsty shipwrecked sailors, and airmen whose planes had been brought down. These unlucky men often drifted at sea for long periods in rafts or small boats.

Each man carried a small collapsible bag, made of waterproof material, which had a filter and a sucking tube. On the raft were supplies of zeolite. The cast-away would fill the bag with sea water and then drop into it a tablet of zeolite. This would dissolve in about 20 minutes and by its chemical action render the salt water fresh.

Zeolite consists mainly of silicates of lime, soda, and alumina, and is usually found where there are igneous rocks.

How is Easter Fixed ?

In early times all countries did not keep Easter on the same date. The churches of Asia Minor celebrated it on the same day as the Jews kept their Passover, while the Churches of the West, remembering that Jesus rose on a Sunday, kept Easter on the Sunday following the Passover day. Various attempts to reconcile these two practices failed, and then the Council of Nicaea passed a decree that everywhere the great feast should be observed upon the same day, that day to be the Sunday following the Jewish Passover. To prevent further disputes, four rules were laid down for the fixing of the date.

It was decided that March 21 should be regarded as the Spring Equinox—the time in spring when day and night are equal; that the full Moon on that date, or the next after that date, should be taken for the full Moon of the Passover month; that the Sunday following full Moon should be Easter Day; and that if the full Moon happened on a Sunday, Easter should be the Sunday after. This plan has been observed ever since, and by it the date of Easter is fixed.

In carrying out the arrangement for the fixing of Easter various difficulties have arisen during the centuries owing to the

fact that the moons do not correspond exactly with the calendar. A series, or cycle, of 19 years has therefore been taken and numbered from 1 to 19, the numbers being known as Golden Numbers. Then to each of these years has also been given a number which is the age, reckoned in days, of the Moon at the beginning of the year. The numbers in this second series are known as Epacts, and from the Golden Number and Epact the full Moon for deciding the date of Easter in any year may be worked out.

It is curious that in arranging the date of Easter according to rule, the Spring Equinox is a calculated date and not the actual Spring Equinox; the moon referred to is not the actual Moon shining in the sky, but a mathematically calculated moon; and full Moon does not mean a complete circular Moon, but a supposed full Moon according to certain averaging over a course of years. All this is due to the imperfections of the calendar, which never corresponds exactly with the real movements of the Sun and Moon.

By means of the Golden Number and the Epact, which can always be found set forth in any good almanac, a clever boy or girl can work out the date of Easter for any year. The earliest date on which Easter Sunday can fall is March 22, but that will not occur till the year 2285, and the latest possible date is April 25, which occurred in 1943.

The reason 19 years are taken to form a cycle for reckoning the Golden Numbers is that after nineteen years on a given day of the month the Moon is approximately in the same position in the sky as it was nineteen years before, so that nineteen forms a complete series.

What is Hydroponics ?

Hydroponics is a method of growing plants without soil by supplying to them the chemicals which, in their natural manner of growth, they derive from the earth. The roots of the plants grown in this artificial manner must, of course, be supported, and for this purpose a porous litter-bed composed of wood-wool, peat, straw, moss, or some other material is used. This litter bed is arranged on a frame with a wire mesh or perforated bottom through which the plant's roots can reach down to the solution of nutrient chemicals below the frame.

The Story of the Beautiful Things in the Treasure-House of the World



Pottery vase from
Phaestus, Crete



Lead figure
from Troy



Bronze lamp-stand from
Aegion, Greece



Bronze mirror from Sunium,
Attica, in Greece

DIGGING UP THE ANCIENT WORLD—2

CRETE, TROY, AND ANCIENT GREECE

In this chapter we continue our story of the exploration of ancient civilisations. We go first to Crete, Mycenae, and Greece; then to Syria and Palestine. In Italy we complete our survey of the Mediterranean countries. Then we visit Eastern lands and America. Finally we come to what the spade has revealed in our own island.

IT was in the island of Crete, whose story has been dealt with already in the History and Art sections of this work, that the civilisation next in time and importance to that of Egypt appeared. It began as far back as the first Pyramid builders and rose and waned in unison with Egyptian art and culture. It had a great period of renaissance about 3000 B.C., and between 2250 B.C. and 1200 B.C. was the centre of a great island Empire which stretched over the Aegean Sea to the mainland, where it had considerable power.

Though its history is so old, the story of its excavation belongs to the last 100 years. It begins with the search for the relics of a people and an art which were young when Crete was old. Part of the story belongs to the work of Schliemann, who unearthed Troy, and found, though he hardly realised it, the remains of a mighty empire which had been lost. All

that was known of it was vaguer than the stories of Homer, nothing more than legends of the Minotaur with the eye in its forehead and the Labyrinth, Minos the King, and Daedalus who sought the sky with uplifted wings.

Today these fairy tales are real. When Schliemann had turned his attention from Troy to Mycenae the archaeologists began to ask whence this unexampled civilisation had come, for it had no complete affinity with that of the Hittites, its nearer neighbours, or with that of the more distant Egyptians. It was not a Mycenaean civilisation, but something wider, perhaps that of the Achaeans, who were more widely scattered; and more certainly that of a sea-going people, for the sea continually appears in their art. In 1883 a German writer, Milchöfer, suggested that perhaps Crete was the centre, and in 1886 Schliemann tried to secure the site of Knossos for excavation. He had heard of the discovery of a grotto to Zeus by a Cretan on the south coast. But the Cretans put obstacles in his way, and for some years nothing was attempted.

Then in the nineties of last century Sir Arthur Evans saw some curious seals with

PICTURES · STATUES · CARVINGS · BUILDINGS · IVORIES · CRAFTS

figures on them which he announced to be an unknown form of picture-writing. Thereupon he revived the idea that Crete had been the centre of the civilisation of an island people who had represented Europe in the long struggle against Asia. He was more successful than Schliemann had been with the Cretans, and he secured the Knossos area for excavation. In this century he uncovered the great dwelling of King Minos—not one palace but many.

LIFE AS IT WAS IN THE PALACE OF MINOS OF CRETE

We can sit on the king's throne. We can, as Professor Macalister says, turn over the tablets on which his stewards recorded the household accounts and inventories, though as yet we may not pry into their secrets. Broad stairs lead from court to court, from anteroom to bedroom, or bathroom to light-wells and concert-halls, on one of which is a picture of ladies in flounced skirts and low-cut bodices. There are treasure chambers and great cellars stored with jars for provisions.

There are underground chambers revealing that an earthquake once wrecked them, the throne where the king sat in judgment, and abundant evidence of a cruel pastime where boys played the part of unarmed matadors with bulls. There are other houses and altars outside the Palace of King Minos, and a remarkable dancing floor in its precincts. Sir Arthur Evans found the best of all the sites in the island of Crete.

There are other sites and other Mediterranean islands, among which Malta, with its chambers for some unknown ritual sunk far underground and its huge stone altars for worship or sacrifice, offers another problem of prehistoric civilisation.

THE GREAT OPPORTUNITY WHICH CAME TO A POOR GROCER'S BOY

Troy and Mycenae proved important sites and they attracted the German-born Heinrich Schliemann.

Schliemann was a poor lad who began to hear about Hector and Achilles from his father sooner than he could read, and in return wrote for him a Latin essay on them when he was ten! Not for this eager boy was the scientific career he wanted, but a hard apprenticeship in a grocer's shop, where he swept the floor and ground the potato flour, and sold butter, salt, and herrings from five in the morning till eleven at night.

He was released from his servitude by an accident that threatened his health, and he settled in Hamburg as a clerk, still dreadfully poor but with opportunity, hardly purchased, to study, especially languages. At last his fortunes turned, he became rich, and he turned joyfully to his first love.

He was nearing forty but he learned Greek in six weeks, and the man who had been a grocer's boy and was now a prosperous merchant in the Russian capital set about turning himself into an archaeologist. He read everything about Greece he could lay his hands on; he travelled in Egypt, Palestine, and Syria, acquiring Arabic on the way, and visited Athens as a prelude to retiring from business; and at last, a man in the mid-forties, he set out to find the Troy of his dreams and to prove that he was right about its site.

NINE CITIES THAT WERE BURIED ONE ABOVE THE OTHER

He proved it. Others had asserted that the Troy of Homer stood on the heights of Bunarbashi where the River Scamander enters the plain. But Schliemann chose Hissarlik as the place, and turned the first sod there in 1870. He found more than he sought, for here were nine cities buried one on top of the other; and though we know now that he was mistaken in his identification of the actual city he sought for, his discoveries startled the world. In 1872 he dug down to a wondrous collection of gold and silver ornaments and jewellery which in his book figures as the Treasure of Priam and is displayed in the engraving as "golden diadems, fillets, earrings, silver talents, and vessels of silver and gold," with actually a key of the treasure chest. Priam probably never saw them, but their significance to knowledge was unmistakable, and even the Turks saw they were worth something as bullion and made some strong objections to their removal. In 1932 new excavations began to discover the tombs of the Trojan kings, which the Turks prohibited Schliemann from seeking.

The prohibition was a blessing. It drove Schliemann to Mycenae, where again his good fortune stood by him, for misled by a word in the Greek historian Pausanias he selected the burial ground behind the Lion Gate in which to dig and there drove down to discover five shaft graves, in two of which the dead were completely covered

with gold and the gold vessels were far more numerous and beautiful than those at Troy. Gold dishes with the most exquisite designs, a little gold sanctuary of Aphrodite and her doves, gold cups and golden masks to cover the faces of the dead. Many of the gold ornaments disclosed designs of seaweed and shellfish, cuttle-fish and fantasies of the sea. It was an art different from any other known, and it was the examination of it, then and thereafter, when it was found repeated elsewhere and on other materials, that led scholars to seek some country or civilisation from which it had spread across the Mediterranean. That origin was found, as we have said, in Crete.

Schliemann was assisted by Dörpfeld, who first made the architecture of Troy clear, and in excavating the Homeric stronghold of Tiryns had much to do in keeping it from clumsy destruction at the hands of the workmen.

Tiryns is a little gem, a citadel built on a rock, and is Schliemann's greatest contribution to an understanding of the heroes who throng the pages of the *Iliad*. But his most enduring gift to knowledge lay in awakening from its sleep of some four thousand years that Mediterranean civilisation the centre of which proved to be Crete, and which continued to reveal itself in every coast of the tideless sea, in Cyprus, and as far west as the shores of Spain. Tiryns, Mycenae, and Crete with the Aegean Islands under its sway were the cradle of Greek Art, an art which to this day inspired mankind. Its supreme age was that of Phidias the Athenian, some of whose sculptures on the Parthenon were sent to England in 1803. Known as the Elgin marbles, these magnificent

treasures are in the British Museum as we read on another page.

So numerous and widespread have been the excavations in Greece and her colonies during the past century and more that we can only mention a few outstanding names and dates.

The Greek remains of Sicily, the island richest in temple ruins, were first examined in 1812. In 1820 a Greek peasant, Georgios of Melos, found there in several pieces the wondrous Aphrodite of Melos which now stands in the Louvre at Paris and was first bought for 750 francs. In 1840 Charles Fellows discovered in a rocky peninsula on the south coast of Asia Minor the ancient Greek Lycia; in 1855 Charles Newton, aided by Lord Stratford de Redcliffe, began the work which added the statue of Demeter at Cnidus to the treasures of the British Museum.

Newton's additions to the collection of Greek sculpture are second only to those of Elgin. He was one of the founders of the School for Hellenic Studies, which has served the work of excavation well. The Winged Victory of Samothrace was found in fragments at Kaballa in the island of Samothrace; the statue by Champoiseau in 1863, the ship's prow twelve years later.

And here is a comparatively recent example. On the north coast of Africa archaeologists have uncovered the ancient city of Cyrene with a great Greek temple in which was found a statue of Aphrodite carved in the Hellenistic Age. These are only a few of the fragments of Greek art which the years have found and the seekers have put together. Delos, Olympia, Eleusis, the Temple at Aegina, Delphi, are among the great names which have received a second birth.

DISCOVERIES IN SYRIA AND PALESTINE

In our survey we now turn back to those ancient civilisations of Syria and Palestine which link geographically the civilisations of Asia with Egypt. It was through Palestine that the wandering tribes from the north reached Egypt and that Egyptian invaders came into contact with that Hittite civilisation of which we read in a previous chapter.

Syria has not been adequately surveyed, but after the close of the First World War the French, who held the Mandate over this country, began excavations on the

north Syrian coast. Near the head of the Gulf of Alexandretta they revealed a settlement which proved to be a cosmopolitan port as mixed in population as that of Marseilles today. Tablets in eight languages show that Cretans, Babylonians, Phoenicians, and, probably, Cypriotes used this ancient place as a port of exchange for the goods that came from Asia to the Mediterranean along one of the most ancient highways in the world.

Palestine has been better served. The first explorer was Seetzen in 1801; he was

followed by Burckhardt, who in 1809 found in the Sinai Peninsula the rock city of Petra, "the rose-red city half as old as Time," as Dean Burgon called it, the capital of Edom. The Dead Sea was explored in 1835 by Costigan, who died of Palestine fever.

Tyrwhitt Drake was one of the victims, and it was his death which gave an opening to the young engineer officer who was afterwards known as Lord Kitchener, and who for a number of years surveyed for the Palestine Exploration Fund, having at least one narrow escape from death during his work.

The Rev. Edward Robinson, an American Congregationalist minister whose studies extended over fourteen years (1838-52) first put the geography of the Holy Land on a sound basis. But most of all are we indebted to the Palestine Exploration Fund, whose maps were superseded only by the photographic survey made during the First World War.

Palestine and Syria were the meeting ground on which the two civilisations of the Semites and the Egyptians warred or met to exchange their products; they were the cockpit and the highway of the peoples of Africa and the fertile crescent of Semitic Asia, the region bounded on the north by the Taurus Mountains and the Aramaeans

of north Syria; on the south by the Arabs of Arabia, to the east by the Assyrians and Babylonians as far as the Persian Gulf; to the west as far as the Mediterranean, by the Phenicians, the Moabites, and the Hebrews.

In Palestine for long years the most interesting discovery was the Moabite Stone of Mesha, King of Moab, found as long ago as 1868. It begins "I Mesha King of Moab," and recounts Mesha's successful revolt against the Israelites. In the neighbourhood of Jerusalem were found a few cuneiform inscriptions, some of which refer to the time when the Assyrians conquered Israel; and at Lachish, where was established the value of Palestinian pottery in fixing dates, Leslie J. Starkey discovered a series of objects of great value to archaeology. Sir Flinders Petrie's excavations at Gaza were of the utmost value in showing the civilisation of peoples overlapping one another since the Stone Age, and at Jericho Professor John Garstang laid bare the story of the city, even to the fire-stricken walls that fell before Joshua.

The most beautiful Palestinian relic, the Alexander sarcophagus, which is now in Istanbul, was bought by a merchant of Sidon in the fourth century. A picture of this fine sculpture is on page 4402.

THE DISCOVERIES IN ITALY

Etruria and the Etruscans, who were a powerful people in Italy before the Romans, with a rarer civilisation and art, have a history still mysterious. They invaded Rome. Lars Porsena was one of their generals and a real person, but references to them by Roman or Greek historians are rare or flimsy or contradictory.

A people of great gifts artistically, of organising power and military ability, the Etruscans differed from the Italians and the Romans in almost everything. Their language was unlike any other in Europe, and though written in Greek characters and though hundreds of inscriptions exist it has never been fully understood or translated. Their religion was strange, their art their own with a touch of Greek influence. It was anciently maintained that the Etruscans came to Italy from Asia Minor something less than a thousand years B.C. No

certain proof of this has been found; and many other suppositions exist, but on the whole it seems most likely that the Etruscans were part of an unknown Asiatic race who reached Umbria about the ninth century before the Christian era. What is all but certain is that the Etruscans burst on the Italian world complete in the elements of civilisation, not as conquerors, but quite simply as complete strangers among a not unfriendly people—as inhabitants of Ireland made themselves at home in Britain. In the island of Lemnos are traces that some halted there on their way to the West; and some French excavations near Ras Shamra in Syria have disclosed tablets which in one of the new languages they reveal may afford a link with the lost Etruscan tongue.

The first Etruscan settlements were on the west coast, north of Rome, with their capital on the site of the modern town of

LINKS WITH DAYS LONG PAST



THE STREET OF MERCURY IN POMPEII TODAY



A HOUSE IN POMPEII

6989



RUINS OF THE SECOND CITY OF TROY



STAIRS IN THE PALACE OF PHAESTUS IN CRETE



THE ROMAN THEATRE AT TAORMINA IN SICILY



THE ROCK TEMPLE OF ED-DEIR
AT PETRA



A BEAUTIFUL VASE FROM
POMPEII



THE MOABITE
STONE



A SCULPTURED BOULDER FROM GUATEMALA



AN ANCIENT VASE FROM CRETE



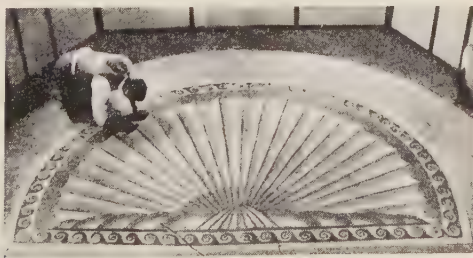
THE THRONE OF MINOS AT KNOSSOS



THE PERISTYLE OF THE SO-CALLED HOUSE OF CLEOPATRA AT DELOS



A STAIRCASE IN THE PALACE AT KNOSSOS



ROMAN MOSAIC PAVEMENT AT ST. ALBANS



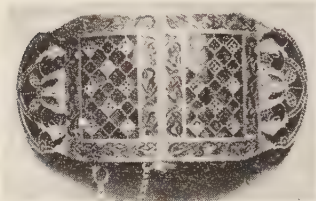
IN THE HOUSE OF THE GLADIATORS, POMPEII



RUINS OF THE WALLS OF ANCIENT ILION



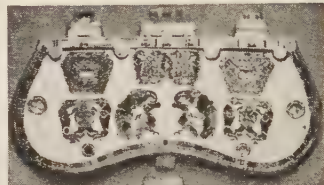
A ROMAN THEATRE UNCOVERED AT ST. ALBANS, WITH ONE OF THE PILLARS RECONSTRUCTED



GOLD CLASP WITH GARNETS AND GLASS, FROM SUTTON HOO



GOLD BUCKLE WITH NIELLO INLAY, FROM SUTTON HOO



JEWELLED AND GOLD-INLAID PURSE-LID, FROM SUTTON HOO



ROMAN POT SHOWING A COMBAT WITH A LION, FROM COLCHESTER



ROMAN VASE SHOWING A HUNTING SCENE, FROM COLCHESTER



A ROMAN SPHINX FOUND AT COLCHESTER



A ROMAN CENTURION AT COLCHESTER



MONUMENT TO A ROMAN CAVALRY OFFICER AT COLCHESTER



A WINGED FIGURE FROM
ETRURIA



AN OLD MAYA GOD AND
HIGH PRIEST



AN ETRUSCAN DRINKING
VESSEL



THE ANCIENT TEMPLE OF BORO BUDUR IN JAVA



RELIEFS ON THE WALLS OF ANGKOR THOM
AT ANGKOR



THE TOMB OF AGAMEMNON
AT MYCENAE

Some of the pictures on these pages are from Dörpfeld's *Troja and Iliion*; others are reproduced by courtesy of the British Museum, Colchester Museum, E.N.A., Messrs. Burton Holmes, Ewing Galloway, Herbert G. Ponting, and others

Corneto Tarquinia. This was in southern Etruria. Later they spread to towns which are now Perugia, Chiusi, Cortona, Arezzo, Volterra, and Fiesole outside Florence, and at all these places their relics have been found. As we have said, they fought with Rome, but they were at last thrust back. They were perhaps not exterminated by war, but by the spreading scourge of malaria, which undermined their vitality. But all that is known certainly about the Etruscans has been found from the excavation of their old cities, such as Marzabotto, which had a wall, paved streets, elaborate houses, fine temples, and a system of drainage; as well as their tombs and the treasures found therein.

The perception of the origins of Etruscan art first arose when Niebuhr, the regenerator of Roman history, became Prussian minister at the Papal Court about 1820. Niebuhr contemplated a work which was to describe the antiquities of Rome, and secured the services of Gerhard, who became one of a band of brilliant young German antiquaries in Italy. Gerhard catalogued the museums, established an international association of all archaeologists, and at its beginning examined the tombs of southern Etruria afresh.

THE HISTORY OF GREEK PAINTING FOUND IN THE ETRUSCAN TOMBS

Insignificant grottoes were found by him to be filled with the most beautiful Greek vases, many of them painted. In a few months there was found one of the finest collection of vases known; there were vases for storing, mixing, pouring, and drinking wine, and what most stamped them, apart from the astonishing designs painted on them, was their combination of the greatest utility with the simplest form. The painted designs had another value, for by their number and variety they interpreted Grecian mythology, and it became possible by noting the pictorial development to date the origin of vases.

In short, the Etruscan tombs wrote for the archaeological world the history of Greek painting. By comparison with that the identification of old Etruria with a Greek settlement was unimportant. The most beautiful vase of all, the François vase, was found at Chiusi, the old Etruscan capital of Clusium, but paintings came from places as far apart as Pisa and Pompeii.

Nor were vases and paintings the only things sought and found; mosaics, jewels, statuary, tombs, and funerary inscriptions and sarcophagi were gathered together.

WHAT THE CATACOMBS IN ROME HAVE TOLD US OF THE EARLY CHRISTIANS

The collecting craze by foreign visitors awakened Italy and Rome to a sense of their hidden treasures. The Archaeological Institute in Rome was founded, and it recruited many indefatigable scholars and workers, among whom was Giambattista de Rossi, whose investigation of the Roman catacombs put the history of the Early Christians on a new foundation.

This was one of the many examples of scientific exploration and research which enriched the archaeological study of Rome during the last century. Among the chief discoveries was that by De Rossi of the catacomb of Calixtus, in 1862. The excavations on the Palatine then begun revealed the temple on the Capitoline and the House of Livia. In 1872 the Forum, long used for Roman cattle and sunk in débris, was so far cleared that the reliefs of the tribune could be seen. The ancient house in the Farnesina, the Ludovisi marble throne, the statue of Apollo found in the Tiber, are also landmarks of discovery.

At Ostia, in the years of Mussolini's dictatorship, the complete plan of the great port was revealed, and in Rome Mussolini had the distinction of having ordered the excavation which led to the discovery of the Forum of Augustus and part of the Library of the Forum of Trajan; so that he left Ancient Rome more venerable than he found it.

WONDERFUL DISCOVERIES IN THE CITIES OF POMPEII AND HERCULANEUM

Napoleon gave the greatest impulse to the exploration of Egypt and its history, and by establishing in Paris the Musée Napoléon stimulated the search in other lands for the treasures of antiquity. His favourite sister Caroline was the most energetic excavator of Pompeii. The discovery of Pompeii was much older; its ruins had been known since 1748, when the mysterious production by Neapolitan peasants of antiquities for sale led to their disclosure. Herculaneum had yielded prizes since the first excavations in 1711, including the wonderful Villa dei Papiri in 1753, where a hundred

statues in bronze and marble, as well as the library of its first owner, had been got out. But work at Herculaneum was very difficult because lava flung over by the eruption of Vesuvius had hardened to stone, and it was abandoned in 1766.

Pompeii was easier to deal with because its ashes were looser. About 1764 two theatres, the three-cornered Forum with its remains of early temples and the sanctuaries of Isis, were uncovered. The Neapolitans went on with the work in leisurely manner for some thirty years, burying houses again after the spoil had been taken from them and leaving decorations to decay. At last concerted digging stopped altogether. It was revived in Napoleonic times by Miot, the minister of Joseph Bonaparte, the new king of Naples, who employed 150 men and spent £900 a year; but Caroline, the wife of Marshal Murat, who succeeded Joseph, put her heart and soul into it, and found employment for 600 workmen. Then were uncovered the solemn Street of Tombs and the Market Place with the colonnade.

Some other temples and the stately

Basilica saw again the light of day. The Bourbons continued the work after Ferdinand re-entered Naples as its king. The two different points of the excavations at the Forum and the Street of Tombs were connected, and the climax of these efforts was reached at the Temple of Fortuna Augusta and the baths near the Forum. In 1860 the Italians infused a new spirit into the examination of the city, putting Fiorelli in charge; and he, beginning on the Pompeian houses, was able first to show how and when they were built, and to establish the existence of four distinct periods in Pompeian art, one or other of which shows derivation from Greece or from Egypt. The most important single discovery was that of the House of the Vettii in 1894, with 188 paintings.

Work has been carried on steadily at Herculaneum and Pompeii in this century. A few fine artistic treasures have been added from Pompeii, but research proves that the two towns, of which Herculaneum was the better built, were neither rich, nor, with few exceptions, cultured.

DISCOVERIES IN THE FARTHER EAST

Having brought the older civilisations of Europe and the Near East almost to our own doors, we may now glance at others in the Farther East and in the Newer West before looking at our own land. In India there is little yet to be discerned of the more ancient civilisations of Mesopotamia, Egypt, Crete, or Syria. But at least one astonishing piece of statuary hints at an origin far older than Greek sculpture.

About 1700 B.C. the Aryan Kassites invaded Babylonia, probably impelled thereby by changes in the climate of Asia, which formed new deserts, and others of the same invaders flowed into India, where they found no old civilisation to adopt, and so set up a less advanced one of their own. Nothing more emerges till Buddhism and the sainted Asoka emerge in the sixth century B.C.; and Asoka's wisdom, his edicts, and his sayings are the most priceless antiquities of the wide Empire he governed. The later relics of art and architecture compare with those of the Roman Empire; and the offshoots, the buried temples of Ceylon, the tremendous temples and palaces of Angkor in Cochin China, and the pyramidal shrine at Boro Budur

in Java, are more imposing but later than the ruined Roman cities of North Africa.

Farther East is the civilisation of China, which is next in age to that of Crete, and may have begun before 2000 B.C. It also may have been created by incursion from Persia or Babylonia; but the seed thus planted there found fertile soil and developed in a way all its own. Nor was the seed long in development, and the bronzes, both those which have been discovered and those which were pictured by the early Chinese antiquaries, some of whom published engravings of them about the time of our William the Conqueror, show that in 1600 B.C. the metal work was fine and beautiful.

But the surface of China has been no more than scratched by the antiquaries. The most important work of all was done by Sir Aurel Stein in excavating the buried cities of Khotan in Chinese Turkestan, or Sinkiang. The ruins were buried by the sand and preserved by it, and it was here that evidence was found of the spread of Indian and Scythian art to China. Khotan was a little kingdom, an oasis, on the route from the valley of the Oxus

to China, and so was a link in the chain from India and the West to the Farthest East. Khotan as a region struggled against the most formidable of deserts, the Taklamakan, and at last the Khotan settlements went down in the fight against its encroachments. But Stein's spade brought to sight a uniform and well-defined civilisation stretching in a straight line for 300 miles. Fine statuary; decorated woodcarving of the Greek and

Buddhist style which showed later the influence of Roman taste also, and which flourished in the north-west of India; early Persian influences, as well as frescoes on Buddhist shrines resembling ancient Indian art—all these were found.

Since then excavations in the provinces of Honan and Shansi have given further evidence, with hopes of more, of a period when China was in touch with the prehistoric cultures of the Near East.

THE LOST CIVILISATION OF THE MAYAS

When the Spanish conquistadores ravaged Mexico they had only a thirst for plunder. The blight has not wholly lifted from those lands, but the wonder has grown, and in Yucatan in Mexico, and in Central America to Honduras, antiquaries find a people by the side of whom the Aztecs are modern.

In many parts their traces are found in fragments of brick and stone; in others, where the forest, as pervading and intrusive as the desert sands of Central Asia, has hidden temples and sculptured pyramids and palace walls, there is evidence of a people, the Mayas, older than the Toltecs, who were before the Aztecs.

The Maya people were first made known in Europe by A. P. Maudslay, who spent thirteen years in visits to Central America to bring back moulds and casts of their buildings and monuments. These were eventually accepted by the British Museum, where still they are. At last they attracted the attention which they merited as the records of a civilisation older than that of the Aztecs or the Toltecs or any other in the region from Yucatan to Honduras and from Palenque to Guatemala City.

But they also attracted the attention of

more than one unbridled theorist, and their origin was ascribed variously to the lost Tribes of Israel, to Egypt, and by one imaginative authority to the year 5000 B.C. But unromantic and patient investigation not yet at an end shows them to have been a race apart who built great cities, who reached high levels in art in stone carvings, paintings, pottery manufacture, and architecture. They had small acquaintance with metals, their tools being stone or wood, and yet had a mathematical turn of mind which enabled them to form a calendar more exact than any before our own.

The Mayas also possessed a system of syllables (but no alphabet), and this enabled them to express by signs their dating. These alone have been read, largely by aid of documents salvaged from destruction and obtained from their degenerate descendants in Yucatan. For the Spaniards had put an end to the Mayas as a people and to everything associated with them except their monuments. It is now clear that they and their flowering life lasted rather less than five centuries, beginning roughly with the first years of the Christian era. Rather strangely they were the only ancient people who invented a sign for zero.

OUR OWN LAND BEFORE THE NORMANS CAME

It has been reserved for the 20th century to discover more of the history of these islands during the 20 centuries before the Christian era began than had been learned in any century since the Romans came and went.

The curtain that closed down after the last Roman legion had left and did not rise again till Saxon history had begun, when all interest in the ancient inhabitants of Britain was extinguished or dispersed

in legend, has again been lifted at its far corners by excavations at the Roman cities of St. Albans and Colchester. In each a separate Celtic city has been disclosed, that at Colchester being the city of Cymbeline, or Cunobelinus.

At St. Albans, which the Romans named Verulamium and made the south midland capital, some of the finest Roman works of art have been found; but at Colchester the discovery of pottery kilns and their

products shows that the people living there were quite capable of assimilating Roman art and industry and of adding it to an art of their own far from negligible. In short, we now learn that the pre-Roman Britons were not woad-painted barbarians, but were a people with a high culture of their own. On that side of the island they were, like the Romans themselves, newcomers who had subdued a native population and were in their turn to fall before Rome's superior military organisation. They were one of several waves of invasion from the Continent—from the Rhine, from France and Belgium which provided the Belgae whom Julius Caesar saw, or from Brittany and Spain.

RELICS OF BRITAIN'S EARLIEST MEN FOUND IN KENT AND SUFFOLK

The earliest men in Britain were those of the Old Stone Age, and how far back that is no one can with certainty tell, for Benjamin Harrison's Eolithic flint implements in Kent and Reid Moir's discoveries in Suffolk put the date back hundreds of thousands of years. But the more strictly archaeological discoveries in England are associated with the New Age of the men of the stone axe merging into the Bronze and Iron Ages. These Neolithic men were here before the first waves of invasion which reached south-east Britain from across the North Sea and the south-west in Cornwall, and the Welsh coast and Ireland from the Atlantic lands of Spain, Portugal, and Brittany. These were the people who made the Long Barrows which were family vaults and raised the dolmens in the west.

CIRCLES OF WOOD AND STONE FROM BRITAIN'S FAR DISTANT PAST

To about the year 2000 B.C. belongs the most ancient of the British big monuments, Avebury Circle, which was raised about the same time as the invasion of the round-headed Beaker Folk, the primitive John Bulls who amalgamated with the tribes they found and began the Bronze Age. To the middle of the Bronze Age, 500 years later, belongs the great circle built of wood and known as Woodhenge. It has six concentric circles of posts and was the forerunner of Stonehenge, the greatest of all our prehistoric monuments, having been built at different times through several centuries.

But there were, both before and after, other tides of invasion attracted from the

Continent by the great wealth of gold in the Wicklow Mountains. Excavations in Ireland by Harvard University have taught us a great deal about these adventurers and settlers. Cornwall imported a great deal of the gold, and a remarkable find of gold ornaments was found at Towednack near St. Ives in 1931. More or less belonging to this period were the people who began the tin-mining industry in Cornwall, built the miners' settlements and circular hill fortresses, and ultimately reached the lake villages of Glastonbury and Meare in Somerset. Here we may see the art of the Celtic Bronze Age which survived the Roman occupation and came to light again in Saxon times. Even the Roman occupation did not submerge these villages; rather did they, or the people who occupied them, absorb what the Romans brought. In the excavated dwellings at Meare, flint implements have been found by the side of Roman-British pottery.

A RACE AS DEVOTED TO THE CULT OF THE DEAD AS THE ANCIENT EGYPTIANS

The excavations in northern England suggest that the people there were chiefly influenced by the culture of Scandinavia and the Baltic. But throughout the several waves of invasion the New Stone Age men of the south seem to have remained a distinct people, affected by the same impulses in their monuments and imbued with the same religious belief. As in a much later age Christianity was sown and flowered in the south, so in the Bronze Age all Britain south of the Trent was persuaded to a way of religion like that of prehistoric Portuguese and Spaniards and other dwellers on the Atlantic shores.

They were as devoted to the cult of the dead as the Egyptians, raising huge monuments of earth and stone in which to bury their great leaders.

In Anglesey, a round chambered tomb at Bryn Celli Dhu, carefully examined in 1925, revealed the ceremonial accompanying a burial. In the tomb was a pillar carefully cut and clearly sacred, and a stone rudely sculptured and engraved with spirals was buried beside a pit outside the chamber. There are indications that human sacrifice was made when the chief was entombed.

About this time a change is seen in some of the habits of these Bronze Age Britons of whose burial customs we know so much more than of their lives, and this is gener-

ally attributed to the thin edge of the Iron Age spreading like a wedge from central Europe, where the weapon of iron was beating down the defensive bronze as Alexander's iron-fronted phalanx burst through Persia.

ONE OF THE GREATEST DISCOVERIES OF THIS CENTURY

The discovery of the link between the British Iron Age and that of Europe is one of the most important of this century. The iron invasion went on for hundreds of years, and its earliest traces are found in that land of prehistoric ghosts, the Wiltshire Downs. The reason for the Wiltshire occupation both then and before is clear, for these Downs were uplifted above the vast forest covering most of Britain to the north. It was one or other of these waves which built the great hill camps like a chain of fortresses from Wiltshire to the far west.

Most of these hill fortresses are quite different from the earlier earthworks of the men of the Stone Age, and we may find it strange to think that they were the work of men who were of the highest skill in metalwork and enamelling and had actually caught some of the inspiration of the far-off Greeks. All that the conquering Roman left to them was the defence of some of the coastal camps in the far west and in Wales. The camp of Trer Ceiri in North Wales is one of them.

Of the mingling of the Romans with the Britons they found in possession much has been learned, and much more is known of Roman Britain than of any period without written record. The military camp of Richborough, where for nearly three centuries a Roman army made its Aldershot, has added much to knowledge which continued excavation in London and a number of small sites has enlarged.

A SECOND FLOWERING OF THE LOST CELTIC ART

But when we come to Saxon times, the most astonishing discovery is the emergence of a second flowering of the lost Celtic art.

In the year 1939, on the sandy heath between the Estuary of the River Deben, Suffolk, and the sea six miles away, a tall barrow was excavated which revealed what the Keeper of British Antiquities at the British Museum described as the most marvellous find in the archaeological annals of England. It was a large ship, of which clear traces remained though the

timbers had disappeared, and it belonged to the Anglo-Saxon, not the later Viking, age, and was of a kind unparalleled in British archaeology. Not only were gold jewellery, silver plate, dishes of bronze and iron found in the ship, but its discovery shed important light on the history of the migrations of the Teutonic peoples, of which the settlement in England by the Saxons was only an episode.

The ship was a great open rowing boat 80 feet long by 14 feet wide and 4 feet 6 inches deep, drawing two feet of water when light, and manned by 38 oarsmen. It has been suggested that it may have been the burial ship of the East Anglian King Aethelhere between the 6th and 7th centuries; but while that is uncertain, what seems likely is that this was the richest of such burials (of which others are known), many of the objects being family or tribal heirlooms.

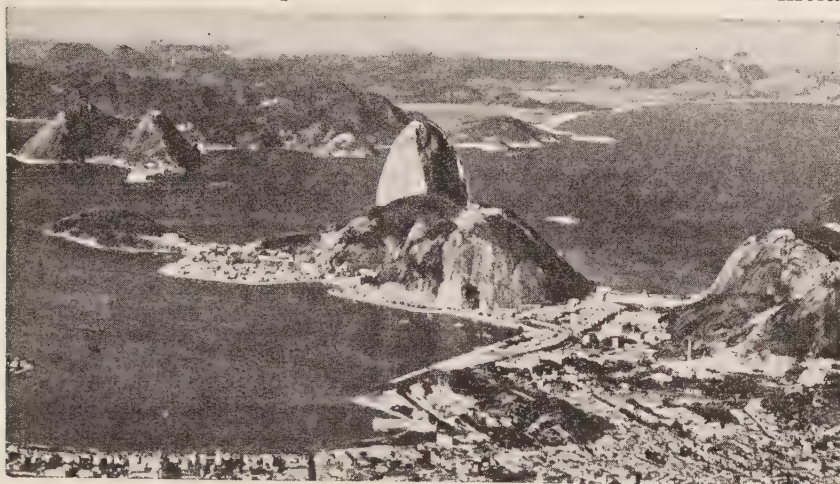
A WEALTH OF GOLD NEVER BEFORE SEEN IN AN ANGLO-SAXON GRAVE

The gold is the most striking; such a wealth of gold had never been seen before in an Anglo-Saxon grave—the great gold belt buckle, the sword with a gold pommel, and 22 other gold pieces, buckles, hinges, clasps, studs, gold coins, and billets, and nearly all jewelled with garnets, over 9000 of these stones. After the gold, a long way after, comes the silver, a miscellaneous collection, probably coming by way of trade from Eastern Europe or the Near East. The most outstanding is the great Anastasius Dish, covered with small incised ornament. Lastly, the "purse lid," the most gorgeous of the finds, with a gold outer frame, and jewelled with bars and panels of garnet and mosaic glass.

Furthermore, the discovery goes to show that the Anglo-Saxons not only absorbed all that the ancient Britons and Roman Britons had left, but that they had preserved and added to it the culture with which they had been in contact on the mainland before they became invaders. Before they were submitted, like the Briton they had conquered, to the law of the sword, they had an artistic achievement superior to that of most European nations, and in nothing but architecture had they anything to learn from their Norman conquerors.

British archaeology is a palimpsest with characters written by Celt, Iberian, Scandinavian, and even Byzantine genius.

The Story of the Peoples of All Nations and Their Homelands



The Sugar Loaf Mountain dominating the harbour of Rio de Janeiro, capital of Brazil

CENTRAL AND SOUTH AMERICA

THE New World which came within the ken of Europe in the end of the fifteenth century is still in the making.

In the centuries that have passed since Columbus first set foot on the Bahama Islands, America has grown so great in wealth and power that she almost overshadows the Old World from which those intrepid men who followed in the footsteps of Columbus sprang. But the European adventurers and conquerors took with them their racial and religious differences, and the course of history has made not one but two Americas—the north, Teutonic and Protestant; the central and south, Latin and Catholic.

While the north marched forward as the United States and Canada, the greater part of Central and Southern America lay for two centuries under the deadening hand of Spanish colonial dominion. That dominion, however, did not destroy the native tribes. The Spaniards went in search of gold and treasure, not to till the ground, and therefore the native Indians remained, though in a state of subjection; so that today the countries of Central and South America are inhabited by a mixture of races, neither European nor

Indian, but Mexican, Peruvian, Chilean, Brazilian, and so on.

The conquerors of South America never really opened up the interior, so that all these Latin-American countries are young countries. Their real development only began about a century ago, and no one can foretell how great a future lies before them. They are in possession of nine million square miles of the Earth's surface, stretching from the Rio Grande, whose waters divide the plains of Texas from the Mexican highlands, down through the narrow mountainous lands which divide the Caribbean Sea from the wide waters of the Pacific, and through the vast pear-shaped continent which we call South America to the "land of fire," that island of mountain, forest, and cloud which ends at Cape Horn. Thus Latin America begins at latitude 30°, away to the north of the Tropic of Cancer, embraces the whole tropical region, and stretches away beyond the 55th parallel of latitude south.

The modern history of this continent begins round one of the narrowest necks of land and water in the world, at the Isthmus of Panama, now pierced by that great American artificial waterway which

THE FIVE CONTINENTS & 100 NATIONS & RACES THAT INHABIT THEM

has joined the Atlantic and the Pacific and is itself a rival to the Suez Canal as one of the engineering wonders of the modern world. For the later adventurers from Spain thought, as Columbus had done, that in reaching America they had reached the fringe of Asia and were on their way to the Spice Islands. Keats has put into immortal lines their amazement when they saw on the other side of that fateful isthmus the wide stretches of the Pacific, though he mistook Cortes for Balboa:

Or like stout Cortes when, with eagle eyes,
He stared at the Pacific—and all his men
Looked at each other with a wild surmise:
Silent, upon a peak in Darien.

THE MIGHTY SPECTACLE WHICH MET THE GAZE OF BALBOA

It was in fact Vasco Nunez de Balboa who was the first European to stand, in 1513, on that peak and see that mighty spectacle. We do not know what height this was—certainly not the Balboa Hill marked on our maps today; but Balboa marched across the isthmus, strode into the sea, and with drawn sword claimed the Pacific on behalf of the King of Castile and Aragon. Four years later, on March 4, 1517, a Spanish sailor touched at Yucatan; and a year later Cortes sailed to Mexico from Cuba, roused the subject peoples of Mexico against their Aztec rulers, and on Tuesday, November 8, 1519, entered the city now known as Mexico City. The vast treasure which the Spaniards found there, though the royal treasure was thrown into the lake and lost, during the two years that followed, inspired the Spaniards to further conquests. Mexico became "New Spain."

Pizarro made his first hazardous and dangerous voyage on the unknown dangerous western coasts of America in 1527, when he reached Tumbez, lying to the north of Cape Blanco.

PIZARRO'S CONQUEST OF THE ANDES AND THE CITY OF THE SUN

He returned to Spain to tell of El Dorado, the golden country he had found, and received the commission for the conquest of Peru, which he carried out with such brilliancy of conception, such daring in execution, such disdain of hardship and danger, and, alas, with so much cruelty.

His second landing was in 1531, with a tiny force of 183 men and 27 horses, and in two years he had scaled the mighty natural fortress of the Andes and taken

the Inca capital of Cuzco, the City of the Sun. Thus the great colonial empire of Spain in South America was founded, and to the end the Peruvian city of Lima, founded by Pizarro, was the centre of the Spanish government of South America, and the seat of the viceroy.

The stories of the conquest of Mexico by Cortes and of Peru by Pizarro are two of the most heroic and marvellous episodes anywhere to be found in modern history. They are told elsewhere in this book, and at length by Prescott in his two books *The Conquest of Mexico* and *The Conquest of Peru*, which must be read if we want to study the beginnings of modern history in Latin America.

Cortes and Pizarro were not the only Spanish heroes among the Conquistadores, as the Spanish conquerors were called. There were Sebastian de Benalcazar and Ximenes de Quesada, who conquered the country between Panama and Peru; Diego de Almagro and Pedro de Valdivia, who occupied Chile; and Pedro de Mendoza who founded the first Spanish settlement at Buenos Aires in 1536. Meanwhile Portugal brought Brazil, or at least the coastal districts of it, into subjection; the Portuguese sailor Cabral had sighted the land as early as 1500, and taken "possession" in the name of his monarch.

EXHAUSTED TRAVELLERS DRIFTING HELPLESS DOWN THE AMAZON

By 1550, in the short space of about 20 years, the vast continent of South America was appropriated by a handful of soldiers for the Spanish and Portuguese monarchs.

Some rough idea of the geographical situation was now available, for in 1520 Magellan had sailed through the Strait of Magellan into the Pacific, and the world knew that America was a continent far distant from the Indies. In 1541 Francis Orellana made that marvellous voyage through the dense tropical forest from Peru down the head waters of the Amazon. Fifty sick and weak men failed to keep in touch with the stronger members of the party, who were marching on the banks on the way from Quito to the Rio Napo. So Orellana and his men could do nothing but let the rafts drift on, day after day, through the forest and its enchanting wonders, getting what food they could, till, in seven months time, they reached the ocean, and a little farther north found a European settlement.

Hardly less adventurous was the expedition of Quesada on the Orinoco in 1537. Though avarice and cruelty marked the conquest, it remains a marvellous achievement. Perhaps because of the stains upon it, the Spanish Americans of today do not seem to hold the founders of the new colonies in any special honour.

What sort of people and what sort of government did the conquerors find? In Mexico and Yucatan, in Honduras, and other parts of Central America they found the remains of great cities belonging to an older Maya civilisation, of great antiquity, the date of which is not yet satisfactorily settled. The massive remains of those buildings of great stones hewn not with iron (for iron tools were still unknown in America when Europeans set foot there), but with stone tools, and ornamented with fantastic carvings and hieroglyphics, have no parallel for massiveness, not even in Egypt, in the Old World.

THE CRUEL RELIGION OF THE AZTECS OF MEXICO

There was also, in Mexico, the Aztec civilisation, highly organised in military matters, in religion, and in education of a kind, but having for its foundation a religion perhaps more bloodthirsty and cruel than any the world has seen. On its altars animals and men were sacrificed with every refinement of cruelty, and cannibal feasts completed the ceremonies on high feast days.

The conquistadores of Peru found the highlands of the Andes and the country as far down as Chile under the rule of the Incas, the Children of the Sun, whose empire had then lasted for about 300 years. Theirs was a despotic rule, but gentler and more advanced in the ordinary arts of life than the Mexican. The great temples and palaces of their cities were also built of mighty hewn stones, put together without mortar, but so exquisitely balanced and shaped that the great Inca walls still form the foundation of the streets of Cuzco. These places were adorned with quantities of gold and silver exquisitely wrought. Indeed, from Mexico and along the whole coast the Spaniards found wonderful gold and silver work, and never succeeded in discovering how the work had been accomplished with the appliances at the disposal of the people.

The Incas had, like the Aztecs of Mexico, succeeded a still older civilisation of great

builders, the remains of whose work are still to be seen at Tihuanaco and other places in Peru and Bolivia. They made great roads over the mountains with marvellous flying bridges over the deep gorges; they terraced the side of those gorges so as to grow roots and grain wherever irrigation was possible in that arid land; and if they kept the people in subjection, they also maintained them in prosperity.

THE LAND BRIDGE BY WHICH MAN MAY HAVE REACHED AMERICA

The Incas were held in more reverence by their subjects than any rulers have ever been, and faint recollections of their greatness linger among the Indians today.

The invaders in both North and South America found a thinly-peopled continent; otherwise the conquest would have been much more difficult. We do not know at what era the Indian tribes which inhabit America first made their way from Asia to the continent or if they were there from the beginning. Some people think they came from Eastern Asia in the first instance, for, whether the tribes are tall or short, long or broad-headed, they approximate more closely to the inhabitants of eastern Asia than to any other type. They may have come across while there was still a land bridge between Europe and Asia in the far north, or they might have crossed by way of the Aleutian Islands.

The Aztec and the Inca civilisations extended over only a part of the whole area. The great majority of the Indians lived, as they live today, in the simplest fashion. In the Gulf of Maracaibo and on the Amazon and Orinoco rivers there are still lake dwellings, perched on lofty piles standing in the water. They are reached by canoe, and the ladder is a notched tree trunk.

THE INDIAN WHO LIGHTS A FIRE UNDER HIS HAMMOCK FOR WARMTH

The ordinary forest house of the Indian of the north has open sides and a sloping roof thatched with palm leaves and reaching almost to the ground; it is more a shelter than a house. The Indian hut of the plains is round or oval, with thatched roof and wall built of wattle and plastered with clay.

The Brazilian tribes differ very much in their degrees of skill and culture. Many of them have no better habitation than a miserable bamboo structure, but the

oblong shelter is the rule, with a couple of separate huts for sleeping and cooking. Some Brazilian huts have bunks, but the hammock, which seems to have been invented by the Guiana Indians, has been introduced practically throughout the continent. The Indian of British Guiana will sometimes light a fire under his hammock by way of protection against the chills of night !

In some districts the Indians live under good conditions, and are educated and well-to-do members of the community; but conditions vary from State to State and from province to province. In Paraguay the Indians form the bulk of a well-organised community with land and houses of their own; in Brazil, where slave raids persisted until comparatively recent times, many tribes are still uncivilised. Generally the Indian is polite and hospitable, but the remote districts of the Amazon are believed still to harbour some cannibal tribes.

DRAKE'S ADVENTURES WITH THE SPANIARDS OF SOUTH AMERICA

It must not be thought that the Spaniards and the Portuguese had it all their own way in the sixteenth century, and were unmolested by their European rivals. French corsairs from St. Malo harassed the Spanish fleets, and French Protestants tried to make a settlement in Brazil. The Dutch long contested Portuguese supremacy in Brazil, and English gentlemen adventurers, openly or secretly assisted by Elizabeth, hung on the sea-routes waiting for the Spanish treasure-ships. Francis Drake landed on the Isthmus, took Nombre de Dios, and ambushed the mule trains carrying Peruvian silver to Panama; and in 1578 he sailed through the Straits of Magellan and laid waste the coasts of Peru. During the short formal war which began in 1585 he ravaged the Spanish Indies, and captured Cartagena. Raleigh and others sought to make settlements in the fever-haunted districts of the Orinoco, and eventually the English, Dutch, and French established themselves in Guiana. For thirty years in the seventeenth century the Dutch fought for the possession of Brazil, and France attacked Rio in 1710.

But generally, from Mexico downwards, the Spaniards and the Portuguese held dominion except in the recesses of the inaccessible forests, where even today the wild tribes still stand outside the law.

Neither Spaniards nor Portuguese had the racial antipathy to the dark man which prevents most British colonists from intermingling with the natives of the places where they settle. The colonial governors assigned tracts of land to their soldiers and to settlers from Spain, and these in many cases intermarried with the Indian population.

THE STRANGE MIXTURE OF PEOPLES IN CENTRAL AND SOUTH AMERICA

The Mexican nation of today is a Spanish-Indian nation; the Brazilians are Portuguese-Indian stock with some Negro admixture, those Negroes brought in many cases from Africa in English slave-ships; in Argentina and Uruguay the population is of Spanish-Indian, Italian, German, and British stock. The Spanish colonial families which have no Indian blood are very few anywhere. Paraguay, alone of all the States, is almost purely Indian, with a small admixture of Spanish blood.

But if you take the whole of South America there are still vast areas in which you may go for miles without finding a human habitation. There are no really reliable figures of population, but there may be in South America today 90 million people, or in the whole of Latin America, including Mexico and the central republics some 120 million. These consist of pure Indians, Negroes (in Brazil), mestizos (mixed European and Indian blood), mulattos and quadroons (mixed European and Negro blood), Spanish and Portuguese colonists, descendants of families long settled in America, and newcomers from Italy, Germany, Great Britain, and Spain.

A Spanish chronicler says that the Chibchas of Bogota (now Colombia) numbered nearly a million at the time of the conquest, and were almost exterminated in twenty years. The number of Indians in Peru and Bolivia was reduced from eight to four millions in two hundred years of Spanish rule. The natives of north-eastern Brazil who were not enslaved were practically exterminated at the end of the sixteenth century.

THE HORRORS CHARLES DARWIN WITNESSED IN ARGENTINA

Charles Darwin, who was in Argentina in 1832 at the time of an expedition by General Rosas against an Indian rising, tells of the slaughter which accompanied its repression. Many Indians perished in the hard toil in the mines and on the land

to which their masters put them, and in modern times the tribes on the Putumayo suffered from the severities of the rubber gatherers; but the agents which tend to thin them out today are strong drink and the diseases they may take from the white man. Everywhere they brew intoxicating drink from maize, sugar-cane, and other plants. The important fact to remember is that though Spanish rule was corrupt, intolerant from the religious point of view, and a barrier to development because of the strict trade monopoly with Spain, it did not completely destroy the native peoples. Some of them were absorbed; those who remained Indians received, not education, but a simple form of Christianity.

of Indians to make rich and prosperous settlements where they grew all kinds of grain, tobacco, sugar, and yerba maté, the Paraguayan substitute for tea, and kept herds of cattle and sheep. When they were driven out the settlements fell into decay, and progress was put back for over half a century. Here and there European Protestant missions carry on the same work. One Peruvian English mission is a small colony of Indians who produce all that is necessary for the little community.

In the last years of the eighteenth century the Spaniards began to improve their methods, and above all they withdrew their veto on trade through the River Plate, the great estuary of the Paraná and



THE MODERN AIRPORT OF GUATEMALA CITY, FIVE THOUSAND FEET ABOVE SEA LEVEL

Above all, Spanish rule gave the continent a common language, Spanish, so that the Colombian or the Mexican can understand the speech of the Chilean or the Argentine. In Brazil, however, Portuguese is spoken. The mestizos speak Spanish or Portuguese, and every Indian who becomes educated learns one or the other.

Latin America has not the "colour" question in the same acute form in which it is known in the United States, and in many parts of South Africa. But centuries of oppression have left the Indians reserved and impassive, and they have never had equal opportunity with the whites. Their best friends in Spanish colonial days were the Jesuit missionaries, who sought to raise the level of their culture; but jealousies led to the expulsion of the Order. In Paraguay they taught colonies

the Uruguay, and the principal route, indeed the only one in those days, into the plains of the centre. They still appointed newcomers from Spain to the higher offices, thus arousing great discontent among the colonial Spanish aristocracy. But the Spanish concessions came too late. The power of the Spaniards in Europe was shaken by Napoleon's conquest of Spain, and revolt against their rule blazed up all over Central and South America.

Napoleon was the real Liberator of South America. We cannot tell here the history of that great struggle, nor of the national heroes who freed Latin America from foreign dominion in the years between 1800 and 1826. There was San Martín, who led the revolution in Argentina and conducted the Army of Liberation in 1817 across the lofty pass over the Andes into

Chile, now pierced by the railway; Bolívar, who delivered the northern republics, together with Peru and Bolivia, and is honoured in all four countries for the purity and disinterestedness of his action even more than for his military achievements; Hidalgo, Morelos, Yturbide, and the unscrupulous Santa Anna in Mexico; and a host of others, among whom we find some of Irish and English birth, notably O'Higgins in Chile.

THE LONG YEARS OF TROUBLE IN THE HISTORY OF MEXICO

The course of history in Mexico was much more complicated than that of the South American States, partly because its territory ran side by side with the United States, to which Mexico had to yield Nevada, Arizona, New Mexico, and Upper California. Then there were long civil wars, and in later years intervention by Spain, Britain, and France, when Mexico suspended payment of her foreign debt. France took separate action after the first two Powers had retired, and established on the throne of Mexico the Archduke Maximilian, a son-in-law of King Leopold of Belgium. He was Emperor of Mexico for the troubled years between 1864 and 1867. In 1867 the United States Government told France plainly that her army must be removed, and that they would recognise no Government in Mexico but a republican one. Maximilian was foolish enough to remain, and was shot by the Republicans on June 19, 1867.

Brazil, too, only gained real independence after a long and chequered struggle between conflicting factions within and with neighbouring States throughout the years from the Declaration of Independence in 1822 to the final abdication of the Portuguese dynasty and the Declaration of the Republic in 1889. Even after this long period of war and revolution, when the republic was established, disorders and local risings made progress in Brazil very slow indeed.

THE HISTORIC DECLARATION WHICH GAVE LATIN AMERICA ITS CHANCE

Generally speaking, the Latin-American States had the sympathy of the United States and of Britain in their fight for freedom. Britain was sympathetic because of her anger with Spain. In 1823 the absolute power of the Spanish king was restored by French arms, and Britain thought that France once more was

making a bid for world power, and she threw her great influence and her naval strength on the side of the revolted colonies. "If France has Spain," cried Canning in a famous speech, "at least it shall be Spain without the Indies. *We have called a new world into existence to redress the balance of the old.*" On December 22, 1823, President Monroe of the United States made the historic declaration that no part of America was henceforth open for colonisation. The Monroe Doctrine has come to mean that, while existing European colonies will be respected, the United States, vastly more powerful than the younger American States, will not allow European domination of any existing independent American country. This, with Canning's declaration, gave Latin America its chance.

The new republics did not quite satisfy their more enthusiastic supporters in the United States and Britain. They had adopted democratic institutions in countries where a great proportion of the population were and are absolutely illiterate, and in States where the great body of the citizens were Indians, with no inkling of the meaning of the vote, but who were prepared to fight when required to do so.

THE SUCCESSION OF REVOLUTIONS WHICH HELD BACK PROGRESS

The result was a succession of revolutions made by ambitious dictators, elections faked by the military party in power, wars between the States, and a general state of chaos from which orderly government only evolved later.

Tropical America, it was said by supercilious observers, had two products, earthquakes and revolutions. It has both today; but the revolutions occur less often. There are signs of a better understanding between the individual States, though there is still some jealousy between them, and the old dispute about the North Chaco, an area of some 100,000 square miles between the rivers Pilcomayo and the Paraguay, led to an outbreak of war between Bolivia and Paraguay which lasted many years. Argentina and Chile, after quarrelling for half a century over their boundary, followed a wiser course. They agreed to the arbitration of Britain, and, after accepting the decision, they set up a solemn monument on the summit of the pass over the Andes, under which the transcontinental railway now bores its

way, as the evidence of their determination never again to go to war one with another. It is a gigantic figure of Christ, with the inscription, *Sooner shall these mountains crumble than the people of Argentina and Chile break the peace which, at the feet of Christ the Redeemer, they have sworn to maintain.*

At intervals the States hold a pan-American congress, at which they can discuss the many interests they have in common. The pan-American Union, too, which had been established in 1890, convened a conference at Petropolis, near Rio de Janeiro, in 1947, at which the American republics signed a treaty of collective security with the United States.

THE VOLCANIC RANGES WHICH RUN DOWN THE WESTERN COAST

Now let us look at the physical conditions out of which the wealth, the prosperity, the advantages, and the difficulties of this great continent spring.

The dominating physical feature is the volcanic range, or parallel ranges, of mountains running down the whole of the western coast. In Mexico the main chain, the Sierra Madre, runs southward from the Rocky Mountains, but practically the whole of the country is a great tableland, varying in height from 4000 to 8000 feet, from which rise numerous ranges of mountains. The principal volcanoes lie in a line between Colima and Vera Cruz. Of these Orizaba and Popocatepetl are about the 18,000 feet level. Popocatepetl is no longer active, but there are some considerable peaks in Mexico which were thrown up as late as the eighteenth century. At each side the slope to the narrow coastal plain is steep. In the south the mountains are compressed into a narrow space, filling, indeed, the whole area of the Mexican province of Oaxaca, and they stretch right away through Central America. Many of the volcanoes are active, and have had devastating eruptions within recent times.

THE COLOSSAL CUT BETWEEN THE MOUNTAINS JOINING TWO OCEANS

At Panama the great series of mountain ranges sinks at one point to the level of about 3000 feet, and there is a saddle between the peaks of only a few hundred feet. It is in this fold that American engineers cut the canal running nearly north and south which connects the Atlantic and Pacific Oceans. The moun-

tains continue down the whole of the west coast of the continent, sometimes in three distinct ranges and sometimes in two, enclosing in Peru and Bolivia wide and lofty tablelands on which lies the high inland sea of Titicaca, once much greater in extent than it is today.

The eastern chain is called Los Andes, and the western La Cordillera. The Andes contain the highest volcanic peaks in the world, Cotopaxi reaching 19,613 feet. Aconcagua, in the extreme west of Argentina, is one of the giant mountains of the world, reaching 23,080 feet. The South American chain has seven peaks over 20,000 feet high, and eight of 16,000 feet and over. If we remember the height of Mont Blanc, 15,782, we have some idea of the gigantic height of the Andes.

In southern Argentina the parallel ranges give place to one, which ends in the rocks of Tierra del Fuego. Along a great part of the coast there is a low coastal range. Short and rapid torrents come down here and there, but the great rivers flow eastward across the plains, traversed in Brazil by a series of lower ranges, which form the water partings between the rivers running north to the Amazon, and between the Amazon and River Plate systems.

THE GREAT RIVER SYSTEM LOOKING LIKE AN INLAND SEA

The Amazon is the largest river system of the world, the main stream having a navigable length of 3000 miles and a total length of 4000 miles to one of its principal sources, the Lake of Lauricocha, which lies to the north-east of Lima in Peru. Many of its great tributaries are also navigable. If we look at the map we see how numerous these are, their great length, and the way in which they widen out here and there into lakes.

In the wet season the Amazon spreads over great areas and in many places has the aspect of an inland sea dotted with forest islands. At all seasons of the year it has many parallel arms, which make it rather a system of waterways than a single waterway. Ocean-going steamers go up as far as Manaos, which is 850 miles up stream from the coast, and is the centre of the rubber trade; ordinary steamers go as far as Iquitos in Peru.

Everywhere the Amazon and its tributaries form practically the only means of communication over a vast area, and the

Indians who live there have always been expert watermen and clever in the construction of the canoes and little flat boats with which they navigate the river. Except for the upper course of the Amazon which is called the Marañon, the whole of its basin is forest, with only small patches of cultivated land; and the same conditions apply to many of its tributaries.

A part of Colombia and the whole of Venezuela lie in the basin of the Orinoco and its feeders, which form the principal highways of the country. The Orinoco is also bordered by forests, but the high lands north and south are covered with a rough pasturage and are known as the Llanos.

HOW THE INSECTS HOLD A WATERWAY AGAINST THE APPROACH OF MAN

Western Colombia is watered by another great river, the Magdalena. South of the Orinoco system, and in the northern part of Brazil, there are more grassy plains before the great forests begin. There is a curious natural canal connecting one of the feeders of the Rio Negro, a northern tributary of the Amazon, with the Orinoco, but it is infested with insects to an even greater degree than the Amazon itself, and is little used even by native canoes. There is, a little higher up the valley, a short water parting where canoes can be hauled across and communication established.

There are two other important factors to be taken into account in the climate and rainfall of South America beside the actual latitude. They are the lie of the mountains, the trade winds, and the cold Antarctic current called after the scientist Humboldt, which comes up the Pacific along the Chilean and Peruvian coasts.

A DISTRICT WHERE IT RAINS EVERY DAY OF THE YEAR

From the Isthmus of Panama down to a little below the Equator, at the Gulf of Guayaquil, the tropical summer rains give everywhere the rank, abundant, and varied vegetation of tropical countries. In the Choco district on the Pacific coast of Colombia it rains every afternoon and evening every day of the year. But from the Gulf of Guayaquil down to a point a little north of Valparaiso the west coast is practically rainless, because the trade winds blow south-east from the Atlantic, and after traversing the continent yield up the remnant of their moisture on the high eastern range of the Andes, leaving none for the plateau, the western range,

and the west coast. That is why there are very few rivers and practically no rain in this district.

Curiously enough, that coast is often buried in cloud and mist, which is born of the contact between the cold air arising from the Humboldt current and the heated land. The sea itself is not the blue sea you expect to see in the tropics, but often cold and grey. Only where a torrent comes down to the sea is there any mitigation of the barrenness of these shores, rich as we shall see, nevertheless, because of the guano deposited by sea-birds on the rocky islands of the coast, which would in a wet climate be washed away and wasted, and the valuable nitrate deposits of the desert of Atacama, which are shipped from Antofagasta. As soon as you are out of the zone of the trade winds, that is, in the neighbourhood of Valparaiso, the position is reversed. The winds are westerly from the Pacific, and give southern Chile abundant rains, while Patagonia, on the eastern side, is a thirsty land.

THE SPACIOUS AND IMPOSING GRANDEUR OF THE MOUNTAIN SCENERY

The Andes themselves have a grandeur to be found nowhere else except in the Himalayas. Throughout their whole length right through the tropics, the summits are clad with snow. But the foothills from the west are bare and dry, without the forests which add to the magnificence of the Himalayas. There is little grass and, except in the deeper valleys, no wood on the western side, and on the east in many places one plunges direct from the mountain into thick forest, so that no view of the mountains or anything else can be obtained.

What redeems the scenery of the High Andes (wrote Lord Bryce in his book on South America) is the richness and delicacy of the colours which the brilliant desert light gives to distant objects. A black peak becomes deep purple; a slope of dry grey earth takes a tender lilac; and evening as it falls transfigures the stones which strew the sides of a valley with a soft glow. The snow sparkles and glitters at noonday and flushes in sunset with a radiance unknown to our climate. . . . Yet this cannot make them inspire the sort of affection we feel for the mountains of temperate countries, with their constant changes from rain to sunlight, their fresh streams and bubbling springs, and flowers starring the high pastures.

There is grandeur and stark beauty of line; there are immense heights and yawning depths. The rainless mountain

tableland of Peru and Bolivia is awe-inspiring and imposing in the grandeur of its scenery; but the loveliest mountain prospects in Latin America are to be found on the Mexican plateau. Here there is sufficient rainfall to give abundant vegetation, there is the bright sunshine of the tropics, with the coolness and clearness of high elevations, and ranges of lower hills, and beyond them the towering snow-clad volcanic cones; while far away to the southward in Chile there is the added beauty of deep-cut sea fiords running up into the land.

Bearing in mind the physical conditions of each region, we can see, if we look at the map, the reasons for the economic circumstances of life. Maize, wheat, coffee, cotton, every kind of fruit, oranges, lemons, grape-fruit, mangoes, bananas, alligator pears—all these flourish in different parts of Mexico, and navel oranges grow wild in perfection. In the north ranching is very important, both for cattle, sheep, and horses.

THE MINERALS WHICH HAVE BROUGHT WEALTH AND TROUBLE TO MEXICO

The great forests on the coasts of Mexico and in the nearby States supply all kinds of tropical hard woods, mahogany, ebony, sandalwood, and rosewood. But the great wealth of Mexico, a wealth which has brought her much trouble and jealousy for 400 years, lies in her minerals; gold, silver, copper, lead, iron, and many others.

Another source of wealth has been her petroleum deposits, which at one time provided as much as a quarter of the world's supplies, although her output now is nothing like this proportion.

The Mexican oilfields were once to a great extent owned by American, British, and Dutch companies. But not long before the Second World War, Mexico decided to take over her oilfields, and she paid large sums of money to the American, British, and Dutch owners for them.

Mexico has many excellent harbours on her western coasts, especially at Acapulco and San Blas. But on the Gulf of Mexico the harbours are not good. The Atlantic current swirls through the Caribbean Sea, forming sand banks and lagoons, the channels of which could be kept clear, though at a great cost. Vera Cruz is the principal port on this coast; it has a good harbour. The greatest of Mexican rivers is the

Rio Grande, which forms the boundary between the United States of America and Mexico.

There are many others, none of great volume, but serving the extensive irrigation works.

A COUNTRY FULL OF INTEREST FOR TRAVELLER AND ARCHAEOLOGIST

Mexico City, the capital of the Republic, is also its commercial centre. The city stands on the plateau at an elevation of 7000 feet on the site of the Aztec city. The museum there is full of interest for the archaeologist. There is the Stone of the Sun with its calendar, and the monstrous image in basalt known as the Idol Huitzilopochtli, the Aztec war god. In Yucatan there are extensive remains of Maya buildings with wonderful sculptures. Mexico is one of the most interesting countries to the traveller. Naturally her principal trade is with her greater neighbour the United States, but Britain sends her a considerable quantity of goods and British engineers have carried out many great works in Mexico.

In the Central American republics and in Venezuela, Colombia, and Ecuador you have the heavy rains of the tropics and their rich, rank vegetation. Until the advance of science taught man how to defend himself against his most deadly enemy the mosquito, the swampy ground around the rivers and on the coast was a death-trap for Europeans, and even for the natives who had been habituated to it for centuries. General Gorgas made the building of the Panama Canal possible by destroying the mosquitos in their breeding places and screening the huts of the labourers; and since then Mexico, Venezuela, and Brazil have learned how to fight yellow fever, adopting the methods of Gorgas, with the result that the plague has almost disappeared.

THE HEALTHY HIGHLANDS AND THE DANGEROUS VALLEYS

This was the first step to a real development of these districts. In all of them the highlands are healthy and relatively cool, the deep valleys and lowlands, too rich in vegetation, are dangerous to humanity. Throughout them the same great range of produce which we have mentioned in Mexico, with the exception, of course, of wheat, grows profusely, and the coconut palm provides the native Indian with food, intoxicating drink, and fibre. Costa Rica

provides one of the best coffees, and exports some millions of bunches of bananas every year. Honduras has the finest mahogany trees in the world, and is one of the places from which we get our bananas.

THE SIX LITTLE REPUBLICS AND ONE COLONY OF CENTRAL AMERICA

Costa Rica and Honduras are two of the seven small states of Central America, the long isthmus between Mexico and South America. Of these seven, one is the Colony of British Honduras and the others are little republics. Costa Rica, which means the Rich Coast, has an area of only 23,000 square miles, and a population of less than a million. Honduras is nearly twice as big; its area is about 44,411 square miles, but its population is less than one and a half millions.

Guatemala is much the same size and has a population approaching three and a half millions. Nicaragua is larger, with an area of 57,145 square miles, but it is thinly populated by fewer than one and a half million people.

Salvador is the baby of Central America with a mere 13,173 square miles of area, but it is thickly populated by over two millions. Panama has an area of 28,576 square miles and a population of less than a million. A small strip on each side of its great canal is controlled by the United States.

In South America the dense forests are the chief obstacles which man has to overcome, and there are vast regions in the tropical area which have so far defied Europeans. You cannot "wander" in a tropical forest, not even in a sub-tropical one, for in an instant you are closed in, and the growth is so dense that a way can only be hacked by using tools.

THE AMAZING VEGETATION OF THE GREAT TROPICAL FORESTS

That is why the upper reaches of the Amazon are still inhabited by savage and even cannibal tribes. Perhaps the great forest region which covers eastern Colombia and Ecuador, a part of eastern Peru, and a vast area in Brazil, would be more untouched than it is if it were not for the rubber seekers, who in pursuit of this product have made their way into the forest where the rivers have cut a path through the dense growth.

The forest has an amazing variety of great trees, many of them with vivid

blossoms of all sorts of colours; there is an undergrowth of palms, bamboos, and other plants, and even the tree fern will grow to the height of 20 feet; then there are the climbing and parasitic plants, from the thick monkey-ladder to the brilliant orchid which add to the profusion of life. Even keeping to the trees and the monkey-ladder as the monkeys usually do, they are still not safe from their enemies, for the boa constrictor winds itself around the trees and catches its prey in this way. Similarly the rivers swarm with alligators which prey on the smaller animals.

The spotted jaguar is the tiger of the new world, and the fiercest of the forest animals. There are many kinds of wild cats. Henry Walter Bates, the traveller and naturalist, records 38 species of monkeys on the Amazon. The Brazilians keep the coaita, or red-faced spider monkey as a pet. Other wild animals of tropical America are the ocelot, a prettily marked beast which lives in the trees and preys on birds; the puma, the Mexican lion, which sometimes attacks horses and cattle; the tapir; the sloth; and the ant-eater.

THE SMALL HUMMING-BIRD AND THE GREAT CONDOR OF THE ANDES

The birds are brilliant in colour but not generally musical in song. Parrots and macaws abound, and the humming-birds, some no bigger than bees and others as large as wrens, flash their lovely wings in the sunshine. Oddest of all South American birds is the toucan of Guiana and Brazil. Its huge beak, like the claw of a lobster, is orange in colour and is 8 inches long; the head is blue and orange, the throat white, and the plumage black with red and white on the tail, altogether an amazing creature. Of the birds of prey the most extraordinary is the condor of the Andes, a kind of South American eagle which figures largely in Peruvian sculptures and pottery. The tortoise is a valuable item of commerce, and on the upper Amazon a staple food.

In northern Brazil the same kind of produce is found as in the northern republics. In the eastern highlands cotton is widely cultivated. Rio de Janeiro the capital, Sao Paulo, and Santos, the coffee port, all lie near the line of Capricorn. But the trade winds from the Atlantic and the height of the land—for the whole district is traversed by a series of mountain ranges—make the climate comparatively

PICTURES OF LATIN AMERICA



THE TOWN OF ROSARIO IN ARGENTINA, SEEN FROM THE RIVER PARANA



A STREET IN HAVANA, CAPITAL OF CUBA



COLUMBUS CATHEDRAL AT HAVANA



THE EXCHANGE AT HAVANA IN CUBA



THE LAW COURTS AT BUENOS AIRES



NATIONAL CONGRESS PALACE AT BUENOS AIRES



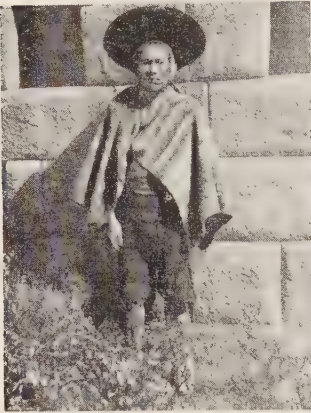
A PLANTER'S HOME NEAR MATANZAS IN CUBA



A PARK IN THE CENTRE OF BUENOS AIRES



THE TOWN OF MANAOS ON THE RIO NEGRO IN BRAZIL



AN OLD INDIAN POSES FOR HIS PORTRAIT



INDIANS OF BRAZIL AT HOME



AN INDIAN OF BRAZIL ENJOYS A SMOKE



THE NATIONAL LIBRARY AT RIO DE JANEIRO



THE OPERA HOUSE AT MANAOS



SANTOS, A PORT OF SANTO PAULO IN BRAZIL



RIO DE JANEIRO, THE CAPITAL OF BRAZIL



BARRANQUILLA, THE CHIEF PORT OF COLOMBIA, ON THE MAGDALENA RIVER



THE AVENUE OF PALMS IN
VERA CRUZ, MEXICO



AN INDIAN MOTHER AND HER
CHILD OF YUCATAN IN MEXICO



THE BASILICA OF JESUS DEL RIO
AT PASTO IN COLOMBIA



THE SEBANA CENTRAL RAILWAY STATION
AT BOGOTÁ IN COLOMBIA



THE GOVERNMENT PALACE AT QUITO
CAPITAL OF ECUADOR



A FOUNTAIN NEAR BOGOTÁ, FEDERAL
CAPITAL OF COLOMBIA



A RAILWAY IN THE STREETS OF
GUAYAQUIL IN ECUADOR



A CLOTH MARKET IN
MEXICO CITY



THE LEGISLATIVE PALACE AT LA PAZ,
CAPITAL OF BOLIVIA



INDIANS IN LA PAZ,
BOLIVIA



AN AYMARA INDIAN
OF BOLIVIA



AN INDIAN MOTHER AND
CHILD IN LA PAZ



THE CITY OF PUEBLA IN MEXICO



TAMPICO, A MEXICAN SEAPORT



POPOCATEPETL, THE GREAT MEXICAN VOLCANO



A STREET SCENE IN TIERRA DEL FUEGO



THE GOVERNMENT PALACE AT ASUNCION,
CAPITAL OF PARAGUAY



SAN JOSÉ CATHEDRAL IN
COSTA RICA



A PEASANT WOMAN
OF NICARAGUA



TWO LITTLE NATIVES OF
PANAMA



A FARM LABOURER
OF NICARAGUA



A NATIVE VILLAGE IN PANAMA



OX-CARTS ON THE ROAD IN COSTA RICA



A WATER-CART IN A STREET IN SAN SALVADOR,
CAPITAL OF SALVADOR



LOOKING DOWN ON THE PANAMA CANAL
FROM THE HILL OF BALBOA



INCA MASONRY IN
CUZCO, PERU



"CHRIST THE REDEEMER" AT
RIO DE JANEIRO, BRAZIL



A NATIVE STREET
IN CHILE



THE PLAZA VICTORIA AT VALPARAISO IN CHILE



THE CATHEDRAL AT JULIACA IN PERU



THE PORT OF ANTOFAGASTA
IN CHILE



A BRIDGE ON ONE OF THE WORLD'S HIGHEST
RAILWAYS, IN THE PERUVIAN ANDES



LOOKING DOWN ON
GUATEMALA CITY



THE GREAT STATUE OF CHRIST
IN THE ANDES



GRANADA, THE LANDING-PLACE
ON LAKE NICARAGUA



A CART DRAWN BY OXEN IN
GUATEMALA CITY



A MAN OF
MEXICO



WATER-CARRIERS NEAR
CULIACAN IN MEXICO



POCITOS BEACH AT MONTE VIDEO,
CAPITAL OF URUGUAY



THE NATIONAL PALACE OF THE PRESIDENT AND
CABINET OF GUATEMALA, AT GUATEMALA CITY



THE CENTRAL RAILWAY STATION,
MONTE VIDEO



MONTE VIDEO CATHEDRAL
IN URUGUAY



THE TOWN OF PAYSANDU
IN URUGUAY



THE PALACE OF THE PRESIDENT & GOVERNMENT
BUILDING AT LIMA, CAPITAL OF PERU

The pictures on these pages are by Messrs Burton Holmes, Ewing Galloway, the E.N.A., and others

cool and pleasant. This is one of the greatest coffee-producing countries in the world, providing three-quarters of the world's supply.

THE FOODS WHICH GROW IN THE SOUTHERN STATES OF BRAZIL

In the southern States the tropical produce, the sugar, the rice, the cocoa, and the nut-bearing palms—from which the famous Brazil nuts are gathered—give way to the crops of more temperate climates. Maize grows in all the provinces, and manioc, the root from which the farina used by Brazilians in breadmaking is derived, is universal. In Parana there is still coffee, but also a great acreage under wheat, potatoes, and yerba maté, the leaf from which a liquid resembling tea is brewed all over the southern States of South America. In Rio Grande do Sul we are in a warm temperate climate, and find enormous stretches of alfalfa or lucerne, the great fodder crop of the continent. Here is the beginning of the ranching industry which makes the wealth of the countries to the south.

The towns of Brazil are modern, with wide streets, electric light, buses, and the rest of the apparatus of civilisation, but within a mile or two of any of them you may find yourself in a wild and impenetrable forest. Rio de Janeiro, known generally simply as Rio, the capital, is one of the most beautifully situated cities of the world, with its wide bay flanked by the Sugar Loaf mountain and the curious pointed peaks of the Organ Mountains.

HOW THE COFFEE IS TAKEN ACROSS THE MOUNTAINS FOR EXPORT

Sao Paulo, which is a centre of the coffee plantations, stands high on the plateau and is connected with Santos, the port from which the coffee is exported, by a mountain railway. Pará, at the mouth of the Amazon, has a large trade up the river down which the rubber from the forests is brought. Pernambuco, built partly on an island at the extreme easterly point of Brazil, is sometimes called by the Brazilians the American Venice. Bahia, once the capital, is now famous for its cocoa and tobacco.

Brazil, far and away the biggest of the Latin American republics, has an area of 3,275,510 square miles, and a population of about 47,000,000.

South of Brazil and westward in the heart of the continent lie the great south-

ern plains of Paraguay, Uruguay, and Argentina.

Paraguay, watered by the Paraná and the Paraguay rivers, is the most Indian of all the States, and outside Asuncion and the two or three other towns the spoken language is Guarani or Indian. Ranching is the principal source of wealth.

Paraguay has an area of 157,006 square miles, and a population of about 1,250,000.

Uruguay is a progressive little State with advanced legislation and a determination to bring the standard of government and of education up to European levels. It has a magnificent river, the Uruguay, and a fine natural port in Monte Video. Though smaller than Paraguay—the area of Uruguay is 72,153 square miles—its population is well over two millions. Both Uruguay and its larger and more powerful neighbour Argentina, are primarily stock-raising countries. The Indian element is less in these two States than anywhere else in South America, and there has been during the last fifty years and more a stream of immigrants from the United States, Germany, England, Scotland, Italy, and Spain, who have brought energy and business methods into them.

BUENOS AIRES, THE BUSIEST CITY IN LATIN AMERICA

Argentina's capital, Buenos Aires, is busy and bustling, and more like a North American city than any other place in Latin America. The people of Buenos Aires are very wealthy, and they make frequent trips to Europe, especially to Paris, bringing back French fashions, French books, and French amusements. The city is rich, smart, and expensive, with nothing of the quiet Spanish city about it. Its citizens will tell you, with pride, that it is the largest city south of the Equator, the largest Spanish-speaking city anywhere, and rapidly becoming one of the largest ports of the world, though it has not the natural advantages of Monte Video, and has been constructed with much labour. Argentina has taken its constitution and its business methods from the United States, but its literary and artistic culture is Spanish and French.

It is the second largest of the Latin American countries, having an area of 1,079,965 square miles. Its population is over 16,000,000, nearly all of the people being of European descent. The native Indians are decreasing in numbers, and

there are fewer than 30,000 of them in the whole country.

The pampas or plains of southern Argentina are really flat, without the undulation which relieves the plain of Uruguay. But away in the west and north you will see that the High Andes are partly in Argentina territory, and that the country stretches away inland to north of the tropic. In these northern districts sugar and tobacco are grown. Argentina is more subject to drought than Uruguay, and also suffers from locusts, which do enormous damage in some years in spite of the strong measures taken against them.

THE SKILLED GAUCHOS WHO ROUND UP THE CATTLE ON THE PLAINS

In the south there is a tract which gets very little rain at any time, as the prevailing winds there are westerly and precipitate their moisture on the Andes. In many districts water is not too plentiful, and it is necessary to sink deep wells, the water being run along the fields in troughs for the use of the cattle.

Argentina is mainly a country of ranching and farming on a large scale, exporting through Buenos Aires to Europe immense quantities of meat, wheat, linseed, and maize. Originally the Spanish landowners had big holdings of a square league, or about six thousand acres. There were practically no enclosures, and great herds of cattle and horses wandered over the plains, marked with their owners' marks and brought in from time to time by the gauchos, who are as skilled with the lasso and the bolas as any American cowboy. Holdings or estancias of this size are still common; but as settlement becomes closer, it is found necessary to find smaller holdings for new men.

THE GREAT STOCK FARMS WHICH SUPPLY THE WORLD WITH MEAT

The romantic day of the unenclosed pampas is past. The estancias are being broken up into fields for the better management of the stock, and wire fencing is everywhere. The herds are carefully bred, and the Argentine landowner spends enormous sums on pedigree animals from Britain, which are kept in good quarters and pampered as pets of the family.

Many estancias are owned by the great meat companies of Buenos Aires and Monte Video, who put in European managers, who have a house and a salary, but are not owners. There are estancias

for the breeding of big herds of cattle, and others where the young stock brought from the breeding ranches are fattened for the freezing works, large areas being kept under maize and alfalfa for feeding them. On the stock-raising farms the labour is provided by the peon, or native Argentine, but on the farms devoted to arable culture many of the workers are Italians.

There is not much variety of life on the estancia, less than there used to be when there were no enclosures, and there was the excitement of catching the stock with the lasso, but on high days and holidays the peon will go off on his horse to the nearest town and get a little amusement. But the town is far away, and though there is a network of railways all over the more thickly settled districts, travelling is expensive and the distances long. The manager and his family themselves get to town seldom, for hotel accommodation is usually dear.

Education under these conditions is difficult. Progress, however, has been made, and the number of people unable to read and write has been considerably reduced in recent years. A tax is imposed on employers to support the universities.

THE MANY FLOURISHING CITIES OF ARGENTINA

Argentina is a great producer of wool and mutton as well as beef, and sheep-raising is the chief industry in southern regions of the country.

The republic has had plenty of troubles. The trade unions are a powerful element in the nation's political life, but periods of dictatorship as well as violent labour disputes have been a frequent experience of the Argentine people.

There are many flourishing cities in Argentina besides Buenos Aires. Tucuman in the north is the centre of the sugar industry, and is about 25 hours by rail from Buenos Aires; the old town of Santa Fé on the Paraná; La Plata, founded in 1882, when the first big boom in Argentina began, was a proverb for its rapid growth, and now it has become important again as a centre of the oil-refining industry; Bahia Blanca is the great shipping port for grain from the south; Córdoba, with its university, set in lovely scenery on the edge of the western highlands, is the city of learning; Comodoro Rivadavia in the south is an important oil centre; and there are many others. One of these

others is the town of Mendoza, which lies on the transcontinental railway from Buenos Aires to Santiago in Chile, just at the point where the railway begins to ascend toward the mountains. This part of Argentina is bare and arid, but Mendoza, watered by a torrent which descends here from the Andes, is a little oasis where the vine flourishes. Here too is one of the centres of the petroleum industry, which became more and more important as wells were found in different parts of the country, from Jujuy in the north to the extreme south. The town of Mendoza has a magnificent view of the high Andes towards the south-west, from Tupungato southwards, especially at sunrise when the light touches the snow with red.

From Mendoza the line passes through a plain, and then up the imposing Valley of Desolation to the point, fifteen hundred feet below the summit of the pass, where the mountain is pierced by the railway tunnel. The line is a wonderful piece of engineering, and for the last part of the ascent to the tunnel the journey is by rack rail.

THE COLOSSAL FIGURE OF JESUS STANDING AS A SYMBOL OF PEACE

Far above on the old mule track stands the gigantic figure of the Christ, to symbolise the determination of the two nations to live at peace. Descending towards Chile you pass through some of the finest rock scenery in the world, and presently descend to a lovely watered country very different from the arid plains of the coast farther north; for here the winds are westerly, and the dry tract is on the Argentine side. Bright sun, mountain air, vineyards, rushing torrents, forest trees, brilliant flowering cactus, and flowers of every hue greet the eye.

At Los Andes the traveller will see men in crimson ponchos—the universal Indian garb in the west, a brightly coloured woollen, oblong cloth, with a hole through which to put the head—galloping along with curiously made and ornamented saddles; he will see teams of oxen drawing the haycarts; droves of pack mules; women carrying baskets of pomegranates; dark, low houses with no windows visible from the street, for the windows open to the court, or patio, round which the house is built; and behind all—the Andes.

Chile, spread like a ragged ribbon up the south-west coast of South America,

has an area of 286,322 square miles and a population approaching 5,500,000. Santiago, the capital of Chile, is a beautiful old Spanish town, and Valparaiso, its port, is one of the busiest places on the Pacific coast.

CENTRAL CHILE AND ITS DANGER FROM EARTHQUAKES

Central Chile is one of the loveliest countries in the world, with its indented coast, its islands, its mountains, its sunshine, and its rich variety of flowers and fruit. The people are energetic and enterprising. The Chilenos had a fierce and long struggle with the Araucanian Indians of this district, who are still among the finest of the native races, and are themselves bold and active. The Chilean cities are not so modern in pattern as some in the Atlantic States, and there is always the danger of earthquakes, like the one which devastated Santiago and Valparaiso in 1906; but great advances are made every year. The whole of the coast is more Spanish, less touched with modern European manners and ways, than we find on the other side of the Andes.

Chile has one great natural source of wealth beside her agriculture, and that is in her nitrate fields. A little to the north of Valparaiso, at about 30 degrees south, the wind direction changes, and the desert begins. In the higher regions of this desert, about 30 miles from the coast, at a height of from 3000 to 5000 feet, occur the nitrate deposits, producing the nitrate of soda or saltpetre which is so valuable a fertiliser, though scientific development of substitutes has greatly affected its supremacy. The district is a barren country, where everything has to be imported for the use of the population which has grown up around the industry. All the food for man and beast, even the water, has to be brought from without, and such little gardens as have been made are made of imported soil. But the district, possession of the whole of which was only obtained by Chile after a war with Peru and Bolivia in 1881, has brought capital and great wealth to Chile.

ANTOFAGASTA, THE SEA-GATE FOR TWO COUNTRIES

The nitrates are exported from the port of Antofagasta, which fetches its water from a spot 193 miles away. From Antofagasta, too, is exported the copper mined in the Bolivian and Chilean mines

in the mountains. This port serves Bolivia as well as Chile, and from there runs a railway right up to La Paz, the real, though not the official capital of Bolivia, which is Sucre.

Two other important seaports in Chile are Iquique, a town which has suffered terribly from earthquakes, and from which nitrates and iodine are exported; and far away in the south Punta Arenas, on the Strait of Magellan, the centre of a flourishing sheep and wool trade.

But to return to Antofagasta. You may either ascend to La Paz from this Chilean port, taking 48 hours, or you may take a shorter route from Arica. Or again there is a railway from Mollendo in Peru to Puno on the Peruvian side of Lake Titicaca, and thence the traveller can go by boat to Guaqui, and on to La Paz by rail. It is possible to approach Bolivia from the Atlantic Ocean from Pará, at the mouth of the Amazon. The Amazon and the Madeira rivers are navigable as far as the falls on the Madeira River near Sant Antonio, from which place there is a little railway leading to Villa Bella in Bolivia, and from this point it is possible to travel by river and on mule-back to La Paz.

LONG STRINGS OF LLAMAS CARRYING GOODS IN THE MOUNTAINS

Bolivia, one of the only two land-locked republics of Latin America (the other is Paraguay), has an area of about 412,000 square miles and a population approaching four millions.

The mule is the standard way of travel in the whole of this high region. For the transport of goods the people of Bolivia and Peru use strings of llamas. The llama is useful for his wool as well, and is shorn every three or four years; but his chief service to humanity is to do their carrying for them. He is a curious beast, and has more than his hump in common with the camel. He knows exactly how much a llama is expected to carry—about 100 pounds—and nothing in the world will induce him to do more than his share. He simply lies down, and will not get up if more is put on his back.

But by whatever route La Paz is reached the traveller finds it a wonderful place. To begin with, it is the highest capital in the world, standing at an elevation of 12,700 feet. That is about the altitude of the Ortler, in Tirol; the difference lies in

the tropical climate. Nevertheless, La Paz does not lie on the top of a hill, but in a deep depression of the plateau, and to reach it you descend into a basin about 1500 feet deep. For the traveller approaching the city from Guaqui there is no sign whatever of the existence of the place until he notices llamas, donkeys, and pedestrians moving along to a spot where they suddenly disappear from view.

HOW THE INDIANS OF BOLIVIA AND PERU KEEP ALOOF FROM THE WHITE MAN

La Paz is so high that the visitor is apt to suffer from the mountain sickness which is one of the difficulties of life on the Peruvian and Bolivian plateau.

La Paz is really an Indian city and Bolivia is primarily an Indian country. But there is little intercourse between the Indians and the white people. The Indian does the actual manual work. Next above him comes the mestizo, or half-breed, who commonly wears European clothes, and is reckoned, by himself at any rate, as a white man. He directs the Indian labour. The Indian is nominally a Christian, but he has adopted the saints of the Church without abandoning the old beliefs and superstitions which he held under the Incas. This is the case, too, with the Quichua Indians who form the country population of Peru. They neither love nor hate the white man, but they fear him and keep aloof, partly because even today there is a tendency to exploit the Indian and cheat him of his just rights. So they live their own lives, keep their own native dances, the real secrets of which are hidden from the white man, though in some places you may now and then see a public dance, when the Indian dresses himself in the most terrible looking masks, adorns himself with all his fine clothes and feathers, and, accompanied by wild and barbarous music, dances as his forefathers have done for centuries.

THE ANCIENT RUINS WHICH HELPED TO MAKE A RAILWAY

La Paz is very cold after sundown, but the Indian seems well acclimatised. He wears a cotton shirt and loose trousers, surmounted by a gay poncho and a felt hat; his women wear a multitude of woollen petticoats, red, orange, and other bright colours. Europeans shiver after sunset, for there are no fireplaces, because the little fuel there is must be reserved for cooking purposes.

The little railway which leads from La Paz to Guaqui on the shores of Lake Titicaca is interesting, because in the building of it the engineers used quantities of the stones of one of the oldest and strangest ruins in the world. These stand on the plain of Tihuanuaco, and date from a period long before the coming of the Incas. There are still standing immense walls and doorways, with carvings of human figures, and of the condor and the puma.

RICH PRODUCTS OF THE MOUNTAINS, PLAINS, AND FORESTS OF BOLIVIA

Bolivia is not all mountainous country. On the other side of the Andes there is some good grazing country where the land descends to the Chaco, the plain which continues under that name into northern Argentina, while the north-east forms part of the selvas or forests of the upper waters of the Amazon, and is a rich rubber country. The mountainous region is rich in tin, copper, silver, and other minerals, which are only partially developed. The silver mountain of Potosi is in Bolivian territory. The chief mineral exported is tin. Other valuable products are coca, from which cocaine is derived, and the beautiful furs of the little chinchilla and the fox. Some of the fine wool of the alpaca and the vicuna goat is exported; but much of it, both here and in Peru, is spun and woven by the people themselves for their own use. Ponchos of vicuna wool are valued all over South America, as they are proof against heavy rain, and practically never wear out.

THE MASSIVE WALLS OF CUZCO WHICH HAVE STOOD FOR THOUSANDS OF YEARS

Crossing Lake Titicaca in the excellent boats which ply between Guaqui and Puno the traveller is in Peru. The natives use a boat made of reeds, which is called a balsa. Titicaca is about one-third as large as Lake Ontario, and contains the islands of the Sun and the Moon held sacred by the Incas. It is a beautiful lake, with a view of the range in which Illimani and Sorata are the giants. One of the most charming things about it is the presence of the great flocks of pink flamingoes, which look as if they had come straight out of a fairy tale. There are quantities, too, of many other sorts of wild fowl.

Away to the north-west the railway carries you to Cuzco, the City of the Sun and the capital of the old Inca empire. It is a Spanish city, but the inhabitants

are mainly Indians. The Spaniards destroyed the ancient city as far as they could, but they could not destroy the vast walls. Some of these walls, built of huge stones fitted together with amazing skill, remain, and in some cases modern houses are built on them. The church and convent of St. Dominic is built out of the remains of the Temple of the Sun, and the west end of the church is evidently an old Inca wall. Outside the city rise the ruins of the ancient fortress of Sacsahuaman, on a hill about 650 feet high. The walls on the side away from Cuzco, where the ascent is less steep, are built in three parallel lines, and the whole forms one of the most imposing remnants in the world of prehistoric times. On the hillside stand seats cut out of the solid rock of the hillside.

The presence of these indications of past greatness arouses endless questions when one sees the abject condition of the people whose forefathers built them. The contrast between the past and the present is more startling here than anywhere else.

TERRACES MADE IN THE HILLSIDES BY THE QUICHUA INDIANS

The people here are Quichuas, and speak the Quichua language. They are most diligent cultivators. Where they are unable to get good land they cultivate terraces made in the hillsides. At some time Peru must have been thickly populated. But the Spaniards allowed the irrigation works to get out of repair, and with that the possibility of supporting a large population on the soil in the more arid districts was destroyed. The population today is over 7,000,000, and the area of the republic is 482,258 square miles.

Excellent cotton of the long-staple Sea Island variety is grown in some districts of Peru. The conditions are similar to those which make the growing of long-staple cotton possible in Egypt. The torrents which come down from the mountains overflow their banks at certain seasons of the year, and when they return to their beds they leave behind them a fine silt which is admirable for cotton-growing. The main crop is similar to American cotton. Sugar is grown in the irrigated districts. Other crops are tobacco, coffee, cocoa, and rice.

On the Peruvian coast are the guano islands. This deposit is a rich manure; but supplies are not so abundant as they

were. Peru has anthracite coal, copper, silver, and gold mines, and oilfields on the Ecuador frontier. Rubber comes from the forests to the east of the sierra and from the forests on the banks of the rivers which flow down to the waters of the Amazon. It is exported by river through Pará in Brazil. Cinchona bark, from which quinine is made, was once an important trade, but now Europe takes its supplies chiefly from Java.

The chief port of Peru is Callao, and eight miles away stands Lima the capital, the city founded by Pizarro on the banks of the Rimac river. Everywhere throughout the continent the towns show considerable art in the laying out of the squares and the streets. Every Spanish town has its great plaza, where the principal churches and buildings are. The plaza is generally planted with trees and has a fountain in the middle. The churches in the older towns date from the early days of the conquest; some of them are admirable examples of Spanish sixteenth and seventeenth-century art. The interiors are richly and rather gaudily decorated, and nearly all the principal ones have silver altars. The old colonial houses are built round a patio, with a fountain in the middle and orange trees or vines or gay flowers.

THE FAMILY LIFE OF THE PEOPLE OF PERU

Here the family live and eat. To the street the house presents a blank wall, sometimes with a carved wooden balcony jutting out into the street, often gay with flowers. The closed-in Spanish house is significant of the social life, which is very much more strict and formal than ours. The visitors to the house are chiefly the whole circle of relations, and it is with difficulty that a stranger is admitted.

The lovely little city of Arequipa is a good example of the Spanish colonial town. It stands on the Rio Chile, and lies about 50 miles from the coast in an amphitheatre of mountains, which includes the three great peaks of El Misti, Chachani, and Pichu Pichu. It stands over 7000 feet above the sea out of reach of the sea fests, in beautiful desert air in a bright light which gives full value to the shadows in the streets bordered by the blank walls of the low houses, broken here and there with fast-shuttered windows.

There is something reminiscent of a

Moorish city in the place, because it is in effect a desert city, and the same ways of living are prescribed by the climate as prevail in the East. That is the real reason for the darkened houses, for their flat roofs, for the courts where the family can sit out in the cool of the evening undisturbed by curious eyes, and for the arcades in which the shopping can be done in protection from the glare of the sun. Arequipa has a cathedral and a magnificent Jesuit church built of red-grey sandstone, with a finely carved façade and an interior rich in wood-carving of every kind. The city is perhaps the most ecclesiastical place in the whole of South America.

THE CAPITAL OF ECUADOR NINE THOUSAND FEET ABOVE THE SEA

The little republic of Ecuador is mountainous and still somewhat undeveloped. Its area is about 276,000 square miles and its population is about 3,250,000. From the port of Guayaquil a railway runs to Quito, the capital, which stands at a height of 9350 feet, and a motor-road, 375 miles long, runs to the Colombian border. There are over 3000 miles of good roads in the State, but much communication is still effected by mules travelling over rough tracks. The country is well watered by rivers which flow down to the River Marañon; some of these are navigable.

Colombia, with an area estimated at 440,000 square miles and a population of about 11,000,000, is enormously rich in her natural resources, but here again there is inadequate communication. The main artery is the Magdalena river. River travelling is slow, and it may take as many as fourteen days to get from the port Cartagena to the capital Bogota.

THE SPANISH TOWN CAPTURED BY SIR FRANCIS DRAKE

Cartagena is an interesting place to English people, because it is there that in 1585 Francis Drake crept into the harbour in the night, and at daybreak broke through the fortifications and captured the town. It is a white city rising straight from the sea, with its streets and houses in the Spanish colonial fashion. The coast is bordered by mangrove swamps. Every kind of tropical produce is grown in Colombia, which is said to have the best mild coffee in the world, and exports large quantities to the United States. Great Britain takes very large quantities of bananas from her.

There are big oilfields in the Magdalena Valley which are being developed by United States companies, so that in time there should be capital enough to exploit the resources of the country. One of the minor industries of Colombia and Ecuador is the making of genuine panama hats, manufactured from the fronds of a certain variety of palm.

Venezuela, which has an area of 352,143 square miles and a population approaching 4,500,000, lies entirely within the tropics, and, like Colombia, is still a long way from being as prosperous as she may one day become. Here again Americans have been busy in connection with the oilfields. Venezuela has the advantage that the Orinoco is navigable throughout the whole of its length in the State, and even beyond its borders into Colombia. Caracas, the capital, stands on high ground, and has beautiful shady streets and squares, so that the climate is not oppressive in spite of the tropical latitude.

East of Venezuela lie the three Colonies of British, Dutch, and French Guiana with a combined area of 170,000 square miles. These have been described elsewhere in this book (see Index).

TWO WEST INDIAN ISLANDS AND THEIR THREE REPUBLICS

There are three Latin-American Republics on Cuba and Hispaniola, the biggest islands of the West Indies. Cuba, 44,206 square miles in area with some 5,000,000 people, was discovered by Columbus and remained Spanish until 1898, when the United States won independence for it by war. After many political and economic troubles Cuba adopted a very democratic Constitution in 1940. Havana is the capital.

Hispaniola is divided between the Dominican Republic and the Republic of Haiti, Haiti being the western third. Discovered by Columbus, with its capital, now called Ciudad Trujillo, founded by his brother, the present Dominican Republic has a Spanish-speaking population of some 2,250,000 in its 19,332 square miles. It won independence from Spain in 1821. Haiti was a French Colony whose negro population, led by Toussaint L'Ouverture, revolted, winning freedom in 1804. Its area is 10,200 square miles and population 3,000,000. Both these republics have received financial and other help from the

United States and have revised their Constitutions in recent years. Sugar is the mainstay of both islands, which have undeveloped forest and mineral wealth.

THE PROBLEM OF THE VAST UNPEOPLED SPACES OF LATIN AMERICA

The future of Latin America no man can safely tell. Where European capital has been abundantly available and backed by a constant immigration of colonists from progressive European countries, as in the case of Uruguay and Argentina, the country is prosperous, and adds substantially to the wealth of the world by the export of food and other commodities. But the case is not quite so simple in hotter countries like Colombia and Ecuador. In Brazil, too, are huge tracts in the hands of Indian tribes living in savage fashion, and great areas are not really explored.

Many people think, nevertheless, that Brazil, so rich in nearly every kind of natural resource, and with a climate that in many districts is nearly perfect, is one of the great countries of the future, and will be able to absorb large numbers of people from Europe.

The United States, however, realising that their future was decisively linked with her own, undertook at the Pan-American Conference of 1940 to support all the Latin-American States in trade as well as in defence questions.

On the whole, then, development since the Wars of Liberation has been rapid. Education is still backward, and must be where the population is scattered. There are State universities, while many young men and women attend the universities of the United States, strengthening the hold of the ideas of the Great Republic on its sister nations.

THE PLACE OF SOUTH AMERICA IN THE FUTURE OF THE WORLD

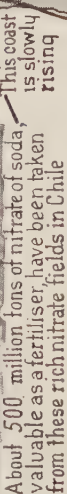
Nature has given South America such a magnificent country that she may yet redress the balance of the Old World; but she lacks the tradition of good government and of freedom which we are so fortunate as to inherit from our forefathers. It may be that, with her statesmen taking part in the Pan-American Conference and in the political and social work of the United Nations, both the ideas and the practice may improve, and in due course bring health and happiness to the peoples of this vast continent.

MAPS OF SOUTH & CENTRAL AMERICA



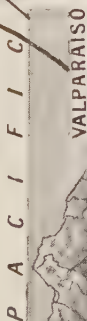
THIS BIRD'S-EYE VIEW OF SOUTH AMERICA SHOWS THE COUNTRIES, CHIEF TOWNS, MOUNTAINS, AND RIVERS

[illegible]



— This cost is slowly rising

About 500 million tons of nitrate of soda, valuable as a fertiliser, have been taken from these rich nitrate fields in Chile



VALPARAISO

Here is Aconcagua, 22,800 feet high, the tallest peak in South America.



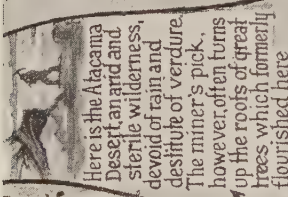
northern limit

In the Pleistocene Age the giant sloth, a creature the size of the elephant, roamed over Patagonia. It dragged down trees in order to feed on the leaves.

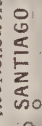
Northern limit of drift ice



Here the snow line is only 390 feet above sea level.



Here is the Atacama Desert, an arid and sterile wilderness, devoid of rain and destitute of verdure. The miner's pick, however, often turns up the roots of great trees, which formerly flourished here.



SANTIAGO

The Argentine is now one of the world's greatest granaries.



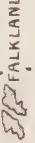
In Patagonia are vast beds of gravel, 600 miles long, 200 miles wide, and 50 feet

ranges must
have been
worn down
to yield
such beds
as these

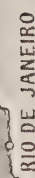


The Falkland Islands have an area of about 4850 square miles and consist of two large islands and about 100 small islands. On these treeless but well grassed lands large numbers of sheep, cattle, and horses are reared.

FALKLAND ISLANDS, Back ice



SOUTH GEORGIA



According to the latest theory, South America is toppling over towards the Atlantic, the washing down of the Andes into the plain by the rain and rivers upsetting the balance of the continent.



Here is a long chain of lagoons, one of them, the Lagoa dos Patos, being an inland sea 3500 square miles in extent

TLAN--T--C

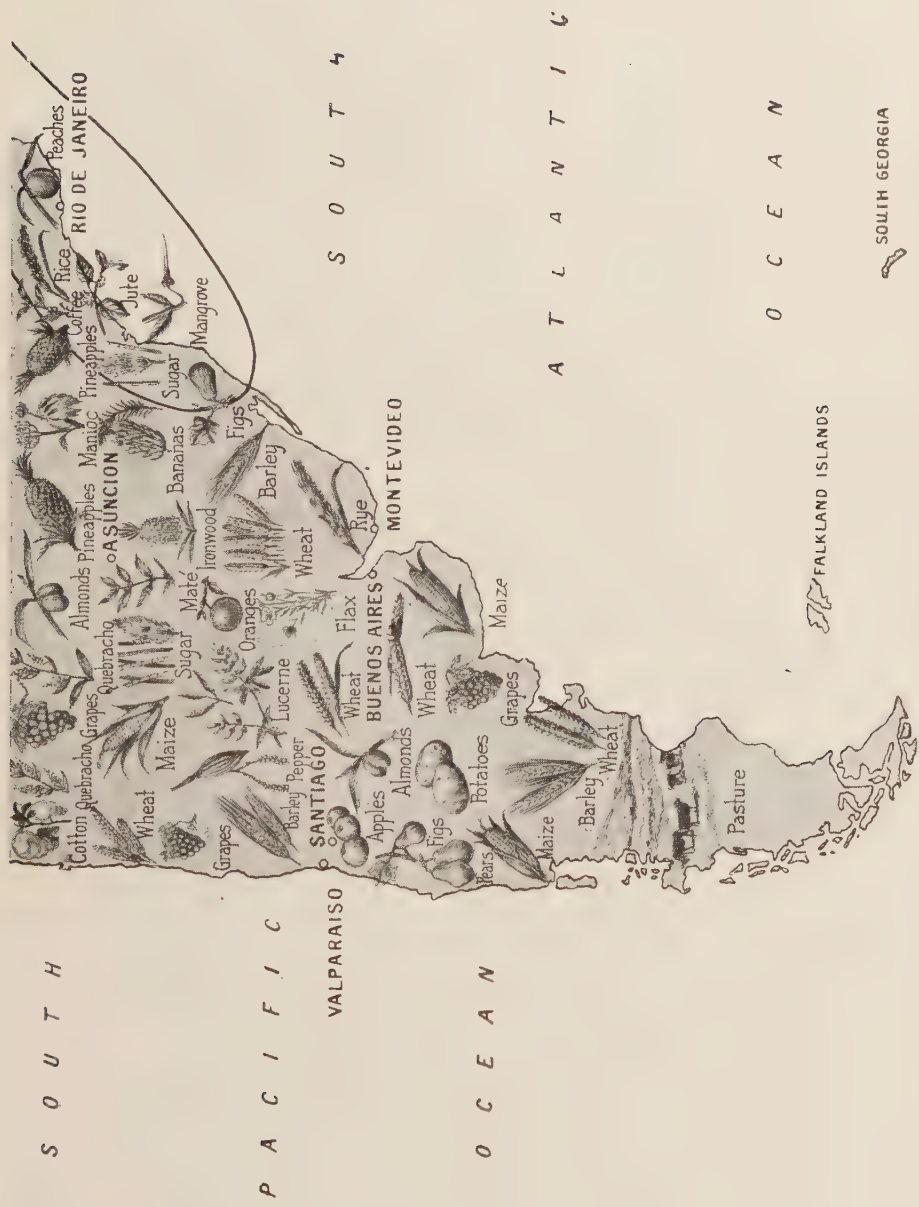
The sea here
is four miles
deep

South America is a little less in area than North America. Its 6,817,400 square miles form nearly one seventh of the Earth's land surface.

AS MAY BE SEEN FROM THIS PICTURE-MAP, THE FACE OF SOUTH AMERICA ABOUNDS IN THE MOST INTERESTING PHYSICAL FEATURES

THE INTERESTING PLANT LIFE OF SOUTH AMERICA





AMONG THE PLANTS WHICH THRIVE IN SOUTH AMERICA ARE COFFEE, COTTON, RICE, ORANGES, LEMONS, BANANAS, AND RUBBER TREES.

[illegible]

[illegible]

7030

One Thousand Poems of All Times and All Countries

Wordsworth's Ode On Immortality

WILLIAM WORDSWORTH is known by this poem more universally than by any other of his writings, for it appeals, with great beauty of thought and language, to a common human experience. Looking back, the man remembers how the fresh sights of the natural world thrilled him when he was a boy. It was as if a glow rested on it from other worlds. The poet suggests that a child brings into the world lingering recollections—mere hints—of lives lived before, and though they fade away they leave us spiritual longings to the end of our days. The title of the poem is *Intimations of Immortality from Recollections of Early Childhood*.

WORDSWORTH RECALLS HIS CHILDHOOD

The poet begins by stating that the dreams and visions of his youth had made the Earth, and all his eyes had looked upon in early years, so beautiful to him that in later life, when the commoner sights had become so familiar, they seemed to lose some of the qualities they once possessed.

THERE was a time when meadow, grove,
and stream,
The earth, and every common sight,
To me did seem
Apparelled in celestial light,
The glory and the freshness of a dream.
It is not now as it hath been of yore:
Turn whereso'er I may,
By night or day,
The things which I have seen I now can
see no more.

His knowledge tells him that Earth and all its wonders are not less fair than when he was young; but they have lost the "glory" which they had when his eyes first beheld them.

THE Rainbow comes and goes,
And lovely is the Rose;
The Moon doth with delight
Look round her when the heavens are
bare;
Waters on a starry night
Are beautiful and fair;
The sunshine is a glorious birth;
But yet I know, where'er I go,
That there hath passed away a glory from
the earth.

But there are times in our later years when the singing of the birds and the frisking of the lambs suddenly bring up before us, as in a flash, our childhood's happy visions.

Now, while the birds thus sing a joyous
song,
And while the young lambs bound
As to the tabor's sound,
To me alone there came a thought of grief:
A timely utterance gave that thought relief,
And I again am strong;
The cataracts blow their trumpets from
the steep;

No more shall grief of mine the season
wrong;
I hear the echoes through the mountains
throng,
The Winds come to me from the fields of
sleep,
And all the earth is gay;
Land and sea
Give themselves up to jollity,
And with the heart of May
Doth every beast keep holiday;
Thou Child of Joy,
Shout round me, let me hear thy shouts,
thou happy Shepherd-boy!

Yet, in the midst of his delight in thus living over again his childhood's joys, the poet finds himself making note of some things—a tree and a field—that seemed to be different now as compared with his early visions of them; thus the spell is broken; he is a man again, and trained thought takes the place of simple natural feeling and delight.

YE blessed creatures, I have heard the call
Ye to each other make; I see
The heavens laugh with you in your jubilee;
My heart is at your festival,
My head hath its coronal,
The fulness of your bliss, I feel—I feel it all.
O evil day! if I were sullen
While Earth herself is adorning,
This sweet May-morning,
And the children are culling
On every side,
In a thousand valleys far and wide,
Fresh flowers; while the sun shines
warm,
And the babe leaps up on his mother's arm.
I hear, I hear, with joy I hear!
But there's a tree, of many one,
A single field which I have looked upon;
Both of them speak of something that is
gone:
The Pansy at my feet
Doth the same tale repeat:
Whither is fled the visionary gleam?
Where is it now, the glory and the dream?

POEMS • SONGS • BALLADS • VERSES AND RHYMES WITH MUSIC

Then he begins to think what these remembered visions of his vanished childhood may mean. In this great stanza he sets forth his thoughts. We may have lived before, and as in nianhood we catch fleeting visions of our childhood. so may we have faint visions of a previous existence.

OUR birth is but a sleep and a forgetting:
The Soul that rises with us, our life's
Star,
Hath had elsewhere its setting,
And cometh from afar:
Not in entire forgetfulness,
And not in utter nakedness,
But trailing clouds of glory do we come
From God, who is our home;
Heaven lies about us in our infancy!
Shades of the prison-house begin to close
Upon the growing Boy, [flows,
But He beholds the light, and whence it
He sees it in his joy;
The Youth, who daily farther from the east
Must travel, still is Nature's priest,
And by the vision splendid
Is on his way attended;
At length the Man perceives it die away,
And fade into the light of common day.

It may be, the poet suggests, that our present existence here on Earth, with all its distractions and pleasures, has dulled in us the memory of the "imperial palace," or heaven, whence our souls have come, just as the experience of manhood and age dulls in us the memories of our childhood.

EARTH fills her lap with pleasures of her
own;
Yearnings she hath in her own natural
kind,
And, even with something of a mother's
mind,
And no unworthy aim,
The homely Nurse doth all she can
To make her foster-child, her innate Man,
Forget the glories he hath known,
And that imperial palace whence he came.

The thought expressed in the previous stanza is followed farther in the next. But we are to remember that the poet never asserts as a fact that he believes in a past existence. The idea is a very old one and is a feature of some religions, such as Buddhism, and the poet suggests it for a poetic purpose which will presently be made clear to us.

BEHOLD the Child among his new-born
blisses,
A six years' darling of a pigmy size!
See, where 'mid work of his own hand he
lies,
Fretted by sallies of his mother's kisses,
With light upon him from his father's eyes!
See, at his feet, some little plan or chart,
Some fragment from his dream of human
life,
Shaped by himself with newly-learnèd art;
A wedding or a festival,
A mourning or a funeral;
And this hath now his heart,

And unto this he frames his song:

Then will he fit his tongue
To dialogues of business, love, or strife;
But it will not be long
Ere this be thrown aside,
And with new joy and pride
The little actor cons another part;
Filling from time to time his "humorous
stage"

With all the Persons, down to palsied Age,
That Life brings with her in her equipage;
As if his whole vocation
Were endless imitation.

The poet now addresses the child. The little boy, the little girl, is the greatest wonder of the world! For in its little body is the seed of everlasting life; it is "glorious in the sight of heaven-born freedom"; but, as the years grow upon it and make the wonders of the world commonplaces to it, it will become ever less conscious of these wonders.

THOU, whose exterior semblance doth
belie
Thy soul's immensity;
Thou best Philosopher, who yet dost keep
Thy heritage; thou Eye among the blind,
That, deaf and silent, read'st the eternal
deep,

Haunted for ever by the eternal mind :
Mighty Prophet! Seer blest!

On whom those truths do rest
Which we are toiling all our lives to find,
In darkness lost, the darkness of the grave;
Thou, over whom thy Immortality
Broods like the Day, a master o'er a slave,
A presence which is not to be put by;
Thou little Child, yet glorious in the might
Of heaven-born freedom on thy being's
height,

Why with such earnest pains dost thou
provoke

The years to bring the inevitable yoke,
Thus blindly with thy blessedness at strife?
Full soon thy soul shall have her earthly
freight,

And custom lie upon thee with a weight,
Heavy as frost, and deep almost as life!

Yet, just as at times these visions of our childhood rise again in our mind, so must we in our later years, when our knowledge is ripened, realise that these visions have a mighty power in opening for us the very gateways of immortality. They are not so much to be regarded as glimpses of a life that is past as of an immortal life of the soul which endures for ever. The very fact that such thoughts ever arise in us is a proof that there exists for us some other life beyond the life we are living in this world today. They are like the echoes of a great sea; that sea is the immortal life of the soul, and death is but the beginning of our heavenly voyage.

O JOY! that in our embers
Is something that doth live,
That nature yet remembers
What was so fugitive !
The thought of our past years in me doth
breed

Perpetual benediction; not indeed
 For that which is most worthy to be blest:
 Delight and liberty, the simple creed
 Of childhood, whether busy or at rest,
 With new-fledged hope still fluttering in
 his breast:

Not for these I raise
 The song of thanks and praise;
 But for those obstinate questionings
 Of sense and outward things,
 Fallings from us, vanishings;
 Blank misgivings of a Creature
 Moving about in worlds not realised,
 High instincts before which our mortal
 Nature

Did tremble like a guilty thing surprised:
 But for those first affections,
 Those shadowy recollections,
 Which, be they what they may,
 Are yet the fountain-light of all our day,
 Are yet a master-light of all our seeing;
 Uphold us, cherish, and have power to
 make

Our noisy years seem moments in the being
 Of the eternal Silence; truths that wake,
 To perish never;

Which neither listlessness, nor mad en-
 deavour,

Nor Man nor Boy,
 Nor all that is at enmity with joy,
 Can utterly abolish or destroy!

Hence in a season of calm weather,
 Though inland far we be,
 Our souls have sight of that immortal sea
 Which brought us hither,
 Can in a moment travel thither,
 And see the children sport upon the shore,
 And hear the mighty waters rolling ever-
 more.

Thus at last, in our old age, even when worldly knowledge
 may have dulled our childhood's memories, the joyous
 feelings of our early years may yet awaken within us, and
 our ripened senses should tell us that these feelings are the
 very truth of God speaking to us, not in words, but in a way
 no words can speak, of the immortal life to which we are
 born, if we only have "the faith that looks through death."

THEN sing, ye Birds, sing, sing a joyous
 song!

And let the young Lambs bound
 As to the tabor's sound!

We in thought will join your throng,
 Ye that pipe and ye that play,
 Ye that through your hearts today
 Feel the gladness of the May!

What though the radiance which was once
 so bright

Be now for ever taken from my sight,
 Though nothing can bring back the
 hour

Of splendour in the grass, of glory in the
 flower;

We will grieve not, rather find
 Strength in what remains behind;
 In the primal sympathy
 Which having been must ever be;
 In the soothing thoughts that spring
 Out of human suffering;
 In the faith that looks through
 death,

In years that bring the philosophic mind.

So that in the end, when we are old, if we have preserved
 our faith, though we may have lost the keen sense of wonder
 and delight we enjoyed in childhood, we shall still, in a
 different way, rejoice in all God's creation; and find it
 touching our hearts with feelings of deeper beauty.

AND O, ye Fountains, Meadows, Hills,
 and Groves,

Forbode not any severing of our loves!
 Yet in my heart of hearts I feel your might:
 I only have relinquished one delight
 To live beneath your more habitual sway.
 I love the Brooks which down their
 channels fret,

Even more than when I tripped lightly as
 they;

The innocent brightness of a new-born
 Day is lovely yet;

The Clouds that gather round the setting
 sun

Do take a sober colouring from an eye
 That hath kept watch o'er man's mortality;
 Another race hath been, and other palms
 are won.

Thanks to the human heart by which we
 live,

Thanks to its tenderness, its joys, and fears,
 To me the meanest flower that blows can
 give

Thoughts that do often lie too deep for
 tears.

FREEDOM

The idea that freedom is something which, once for all,
 can be gained, held, and kept as a fixed possession, is com-
 bated by James Russell Lowell, the famous American
 poet, in these lines from one of his poems. Freedom, he
 says, must be constantly renewed to suit new circumstances.

WE are not free: doth Freedom, then,
 consist

In musing with our faces toward the Past,
 While petty cares and crawling interests
 twist

Their spider-threads about us, which at last
 Grow strong as iron chains, to cramp and
 bind

In formal narrowness heart, soul, and mind.
 Freedom is recreated year by year,
 In hearts wide open on the Godward side.

HOW LANG AND DREARY IS THE NIGHT

The poet's habit of attributing his own feelings to his surroundings is often seen in the songs of Robert Burns, and in these longing memories we are given an example of it.

How lang and dreary is the night
When I am frae my dearie!
I restless lie frae e'en to morn,
Tho' I were ne'er sae weary.

For oh, her lanely nights are lang;
And oh, her dreams are eerie;
And oh, her widowed heart is sair,
That's absent frae her dearie.

When I think on the lightsome days
I spent wi' thee, my dearie,
And now that seas between us roar,
How can I be but eerie!

How slow ye move, ye heavy hours;
The joyless day how drearie!
It wasna sae ye glinted by
When I was wi' my dearie.

LINES WRITTEN IN KENSINGTON GARDENS

Matthew Arnold was a singularly all-round man, a scholar, a critic, a poet, but far more than only a man of books. In this poem we see him lying in Kensington Gardens, in the season when sheep are turned into that great London park to crop the grass among the stately trees. And there, encircled by London, he finds himself one with Nature, that never betrays the heart that loves her, and feels a larger peace than is known in the busy racket of the world of men. It is a lesson sweet and true, and is put by the poet into words that constantly have a surprising grace.

In this lone open glade I lie,
Screened by deep boughs on either hand;
And at its end, to stay the eye,
Those black-crowned, red-boled pine trees stand.

Birds here make song, each bird has his,
Across the girdling city's hum.
How green under the boughs it is!
How thick the tremulous sheep-cries come!

Sometimes a child will cross the glade
To take his nurse his broken toy;
Sometimes a thrush flit overhead
Deep in her unknown day's employ.

Here at my feet what wonders pass,
What endless, active life is here!
What blowing daisies, fragrant grass!
An air-stirred forest, fresh and clear.

Scarce fresher is the mountain sod
Where the tired angler lies, stretched out,
And, eased of basket and of rod,
Counts his day's spoil, the spotted trout.

In the huge world which roars hard by
Be others happy, if they can!
But in my helpless cradle I
Was breathed on by the rural Pan.

I, on men's impious uproar hurled,
Think often, as I hear them rave,
That peace has left the upper world,
And now keeps only in the grave.

Yet here is peace for ever new!
When I who watch them am away!
Still all things in this glade go through
The changes of their quiet day.

Then to their happy rest they pass;
The flowers upclose, the birds are fed,
The night comes down upon the grass,
The child sleeps warmly in his bed.

Calm soul of all things! make it mine
To feel, amid the city's jar,
That there abides a peace of thine
Man did not make, and cannot mar!

The will to neither strive nor cry,
The power to feel with others give!
Calm, calm me more! nor let me die
Before I have begun to live.

BREATHES THERE THE MAN

These are the opening lines of the final Canto of Sir Walter Scott's Lay of the Last Minstrel. The aged harper is asked why he, being so skilful, does not journey to England, where he would be better rewarded. His reply is this outburst of patriotic fervour. Such national pride is felt by men of almost every country, but it has seldom been expressed so ardently as it is by Scott in these lines.

BREATHES there the man with soul so dead,
Who never to himself hath said,
This is my own, my native land?
Whose heart hath ne'er within him burned
As home his footsteps he hath turned
From wandering on a foreign strand?
If such there breathe, go, mark him well;
For him no Minstrel raptures swell;
High though his titles, proud his name,
Boundless his wealth as wish can claim;
Despite those titles, power, and pelf,
The wretch, concentred all in self,
Living, shall forfeit fair renown,
And, doubly dying, shall go down
To the vile dust from whence he sprung,
Unwept, unhonoured, and unsung.

O Caledonia! stern and wild,
Meet nurse for a poetic child!
Land of brown heath and shaggy wood,
Land of the mountain and the flood,
Land of my sires! what mortal hand
Can e'er untie the filial band
That knits me to thy rugged strand!

THE BELLS OF HEAVEN

Ralph Hodgson has made himself one of the most sympathetic interpreters of animal life among our poets. Here is a bold outburst against the cruel and shameful oppression of animals, wild and tame.

TWOULD ring the bells of Heaven,
The wildest peal for years,
If Parson lost his senses
And people came to theirs,
And he and they together
Knelt down with angry prayers
For tamed and shabby tigers,
And dancing dogs and bears,
And wretched, blind pit-ponies,
And little hunted hares.

IT WILL END IN THE RIGHT

Gerald Massey, who in youth was a working man, and became a vigorous patriotic poet with a noble love of freedom and a firm faith in the triumph of goodness, wrote verses which have found splendid fulfilment in the present day. Here is an example. Massey lived from 1828 to 1907.

NEVER despair, O my comrades in
sorrow!
I know that our mourning is ended not.
Yet
Shall the vanquished today be the victors
tomorrow,
Our star shall shine on in the tyrant's
sunset.
Hold on, though they spurn thee, for
whom thou art living
A life only cheered by the lamp of its love;
Hold on! Freedom's hope to the bounden
ones giving;
Green spots in the waste wait the worn
spirit-dove.
Hold on—still hold on—in the world's
despite,
Nurse the faith in thy heart, keep the lamp
of Truth bright,
And, my life for thine, it shall end in the
Right.

What though the martyrs and prophets
have perished!
The Angel of Life rolls the stone from their
graves;
Immortal's the faith and the freedom they
cherished,
Their lone triumph cry stirs the spirits of
slaves!
They are gone, but the glory is left in
our life,
Like the day-god's last kiss on the dark-
ness of even,
Gone down on the desolate seas of their
strife,
To climb as star-beacons up Liberty's
heaven.

Think of the wrongs that have ground us
for ages!
Think of the wrongs we have still to
endure!
Think of our blood, red on history's
pages!
Then work, that our reckoning be speedy
and sure.
Slaves cry to their gods, but be our God
revealed
In our lives, in our works, in our warfare
for man;
And bearing—or born upon—Victory's
shield,
Let us fight battle-harnessed, and fall in
the van.
Hold on, still hold on, in the world's
despite,
Nurse the faith in thy heart, keep the
lamp of Truth bright,
And, my life for thine, it shall end in the
Right.

A FAREWELL

These verses were written by Tennyson to the brook at Boxley, in Kent, where he lived for a time—the brook which he described in his *Ode To Memory*. The permanence of Nature contrasted with the short life of man has been a theme for all poets.

FLOW down, cold rivulet, to the sea,
Thy tribute wave deliver;
No more by thee my steps shall be,
For ever and for ever.
Flow, swiftly flow, by lawn and lea,
A rivulet, then a river:
Nowhere by thee my steps shall be,
For ever and for ever.
But here will sigh thine alder tree,
And here thine aspen shiver;
And here by thee will hum the bee,
For ever and for ever.

A thousand suns will stream on thee,
A thousand moons will quiver;
But not by thee my steps shall be,
For ever and for ever.

MUSIC, WHEN SOFT VOICES DIE

This charming little song, illustrating the delights of happy memories, is a scrap by Shelley published after his death.

MUSIC, when soft voices die,
Vibrates in the memory;
Odours, when sweet violets sicken,
Live within the sense they quicken.
Rose leaves, when the rose is dead,
Are heaped for the beloved's bed;
And so thy thoughts, when thou art gone,
Love itself shall slumber on.

THE THREE GIVERS

The fact that he had the blessing of an Irish wife helped Sir William Watson to one of the most graceful compliments ever paid by a poet-husband. These verses are from Sir William's own selection of a hundred of his poems, which are published by Messrs. Hodder and Stoughton.

ENGLAND gave me sun and storm,
The food whereon my spirit throve;
America gave me hand-clasps warm,
And Ireland gave me her I love.

Heirs of unequal wealth they are,
These noble lands, these givers three;
And it was the poorest one by far
That gave the richest gift to me.

TO THE CUCKOO

These verses to the cuckoo, written by Wordsworth in 1802, and containing some admirable touches of description, transport the poet, as was his custom, to his boyhood, when all Nature's sights and sounds thrilled him with a sense of romance. But it is strange that, often as he heard the bird, he never happened to see it in his boyhood. Like the corn-crake, the cuckoo seems to be something of a ventriloquist, but, unlike that ground bird, it can be easily seen.

O BLITHE new-comer! I have heard,
I hear thee and rejoice.
O Cuckoo! shall I call thee bird,
Or but a wandering voice?

While I am lying on the grass
Thy twofold shout I hear;
From hill to hill it seems to pass,
At once far off and near.

Though babbling only to the vale
Of sunshine and of flowers,
Thou bringest unto me a tale
Of visionary hours.

Thrice welcome, darling of the Spring!
Even yet thou art to me
No bird, but an invisible thing,
A voice, a mystery;

The same whom in my schoolboy days
I listened to; that cry
Which made me look a thousand ways
In bush, and tree, and sky.

To seek thee did I often rove
Through woods and on the green;
And thou wert still a hope, a love;
Still longer for, never seen.

And I can listen to thee yet;
Can lie upon the plain
And listen, till I do beget
That golden time again.

O blessed bird! the earth we pace
Again appears to be
An unsubstantial, fairy place;
That is fit home for thee!

LET US WITH A GLADSOME MIND

When he was a schoolboy of fifteen, as he himself tells us, John Milton wrote this paraphrase of Psalm 136. We omit twelve verses of Israelitish history. The paraphrase, though it does not follow the original closely and has not the full melody of the poet's later style, shows signs of the imagination that was to be fully displayed in later life, and is an interesting example of boyish workmanship.

LET us with a gladsome mind
Praise the Lord, for he is kind,
*For his mercies ay endure,
Ever faithful, ever sure.*

Let us blaze his name abroad,
For of Gods he is the Lord:

O let us his praises tell
Who doth the wrathful tyrants quell

Who with his miracles doth make
Amazèd heaven and earth to shake:

Who by his wisdom did create
The painted heavens so full of state:

Who did the solid Earth ordain
To rise above the watery plain:

Who by his all-commanding might
Did fill the new-made world with light.

And caused the golden-tressèd Sun
All the day long his course to run:

The hornèd Moon to shine by night
Amongst her spangled sisters bright:

All living creatures he doth feed,
And with full hand supplies their need:

Let us therefore warble forth
His mighty majesty and worth:

That his mansion hath on high
Above the reach of mortal eye:
*For his mercies ay endure,
Ever faithful, ever sure.*

ORPHEUS AND HIS LUTE

This song, describing the power of music according to ancient fables, is from the play of Henry the Eighth, printed in Shakespeare's works but only partly written by Shakespeare. The song is from the scene which was probably not written by him. Killing is here an adjective.

ORPHEUS with his lute made trees,
And the mountain-tops that freeze,
Bow themselves when he did sing:
To his music plants and flowers
Ever sprung; as sun and showers
There had made a lasting spring.

Everything that heard him play,
Even the billows of the sea,
Hung their heads, and then lay by.
In sweet music is such art,
Killing care and grief of heart
Fall asleep, or, hearing, die.

THE CROWNING OF DREAMING JOHN

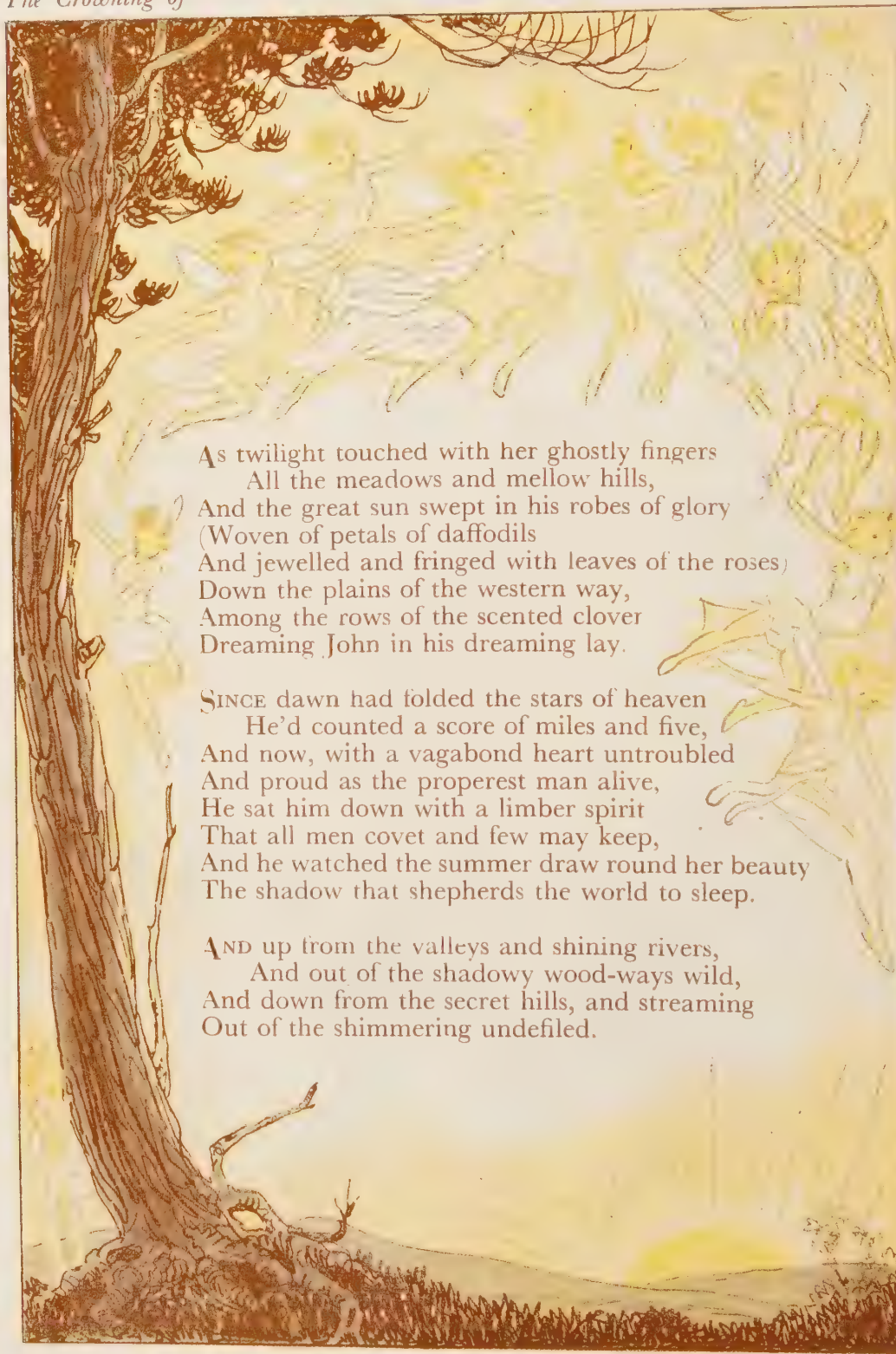
Dreaming John, one of the finest poems of our matchless countryside, is taken from the Collected Poems of John Drinkwater, and is given here by courtesy of his publishers, Sidgwick and Jackson.

*SEVEN days he travelled
Down the roads of England,
Out of leafy Warwick lanes
Into London Town.
Grey and very wrinkled
Was Dreaming John of Grafton,
But seven days he walked to see
A king put on his crown.*

*DOWN the streets of London
He asked the crowded people
Where would be the crowning
And when would it begin.
He said he'd got a shilling,
A shining silver shilling,
But when he came to Westminster
They wouldn't let him in.*

*DREAMING John of Grafton
Looked upon the people,
Laughed a little laugh, and then
Whistled and was gone.
Out along the long roads,
The twisting roads of England,
Back into the Warwick lanes
Wandered Dreaming John.*





As twilight touched with her ghostly fingers
All the meadows and mellow hills,
And the great sun swept in his robes of glory
(Woven of petals of daffodils
And jewelled and fringed with leaves of the roses)
Down the plains of the western way,
Among the rows of the scented clover
Dreaming John in his dreaming lay.

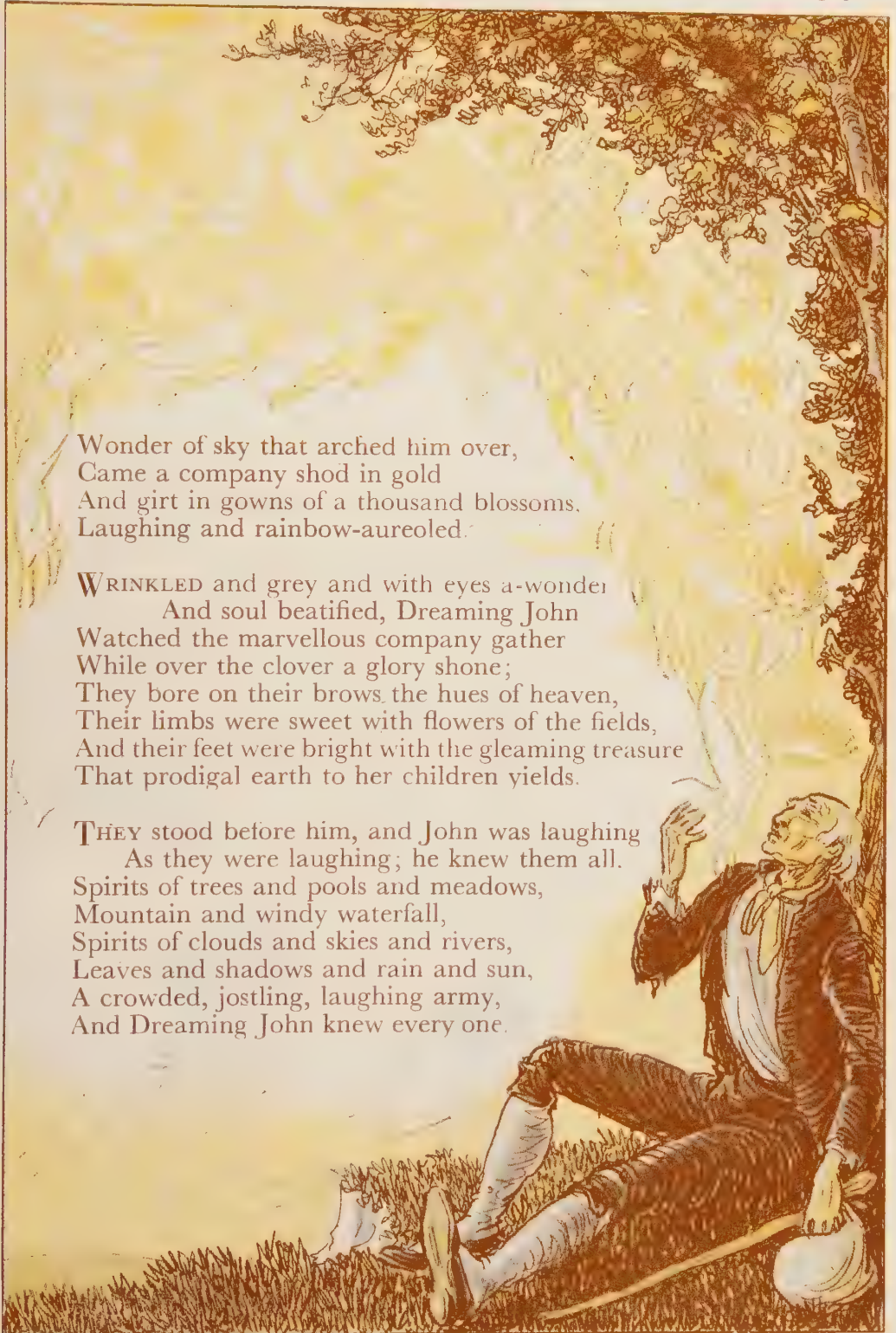
SINCE dawn had folded the stars of heaven
He'd counted a score of miles and five,
And now, with a vagabond heart untroubled
And proud as the properest man alive,
He sat him down with a limber spirit
That all men covet and few may keep,
And he watched the summer draw round her beauty
The shadow that shepherds the world to sleep.

AND up from the valleys and shining rivers,
And out of the shadowy wood-ways wild,
And down from the secret hills, and streaming
Out of the shimmering undefiled.

Wonder of sky that arched him over,
Came a company shod in gold
And girt in gowns of a thousand blossoms.
Laughing and rainbow-aureoled.

WRINKLED and grey and with eyes a-wonder
And soul beatified, Dreaming John
Watched the marvellous company gather
While over the clover a glory shone;
They bore on their brows the hues of heaven,
Their limbs were sweet with flowers of the fields,
And their feet were bright with the gleaming treasure
That prodigal earth to her children yields.

THEY stood before him, and John was laughing
As they were laughing; he knew them all.
Spirits of trees and pools and meadows,
Mountain and windy waterfall,
Spirits of clouds and skies and rivers,
Leaves and shadows and rain and sun,
A crowded, jostling, laughing army,
And Dreaming John knew every one.



AMONG them then was a sound of singing
 And chiming music, as one came down
 The level rows of the scented clover,
 Bearing aloft a flashing crown;
 No word of a man's desert was spoken.
 Nor any word of a man's unworth,
 But there on the wrinkled brow it rested,
 And Dreaming John was king of the Earth.

DREAMING John of Grafton
 Went away to London,
 Saw the coloured banners fly,
 Heard the great bells ring,
 But though his tongue was civil
 And he had a silver shilling,
 They wouldn't let him in to see
 The crowning of the King.

SO back along the long roads,
 The leafy roads of England,
 Dreaming John went carolling,
 Travelling alone;
 And in a summer evening,
 Among the scented clover,
 He held before a shouting throng
 A crowning of his own.

John Drinkwater



RHYMES OF THE CHILDREN OF FRANCE

An English version of these rhymes appears side by side with the French

FAIS DODO, COLAS

FAIS dodo, Colas, mon petit frère,
Fais dodo, t'auras du lolo.
Maman est en haut
Qui fait du gâteau ;
Papa est en bas,
Qui fait du chocolat ;
Fais dodo, Colas, mon petit frère,
Fais dodo, t'auras du lolo.

SUR LE PONT D'AVIGNON

SUR le pont d'Avignon,
L'on y danse, l'on y danse ;
Sur le pont d'Avignon,
L'on y danse tous en rond.
Les beaux messieurs font comm' ça,
Et puis encore comm' ça,
Sur le pont d'Avignon,
L'on y danse, l'on y danse ;
Sur le pont d'Avignon
L'on y danse tous en rond.
Les belles dames font comm' ça,
Et puis encore comm' ça ;
Sur le pont d'Avignon
Tout le monde y danse en rond !

RAMÈNE TES MOUTONS

LA plus aimable à mon gré
Je vais vous la présenter.
Nous lui ferons passer barrière.
"Ramène tes moutons, bergère ;
Ramène, ramène, ramène, donc,
Tes moutons à la maison."

LA MÈRE MICHEL

C'EST la mère Michel qui a perdu son
chat,
Qui crie par la fenêtre à qui le lui rendra,
Et le compère Lustucru qui lui a ré-
pondu ;
"Allez, la mère Michel, votre chat n'est
pas perdu."
C'est la mère Michel qui lui a demandé :
"Mon chat n'est pas perdu ! vous l'avez
donc trouvé ?"
Et le compère Lustucru qui lui a ré-
pondu :
"Donnez une récompense, il vous sera
rendu."
Et la mère Michel lui dit : "C'est décidé,
Si vous rendez mon chat, vous aurez un
baiser."
Le compère Lustucru, qui n'en a pas
voulu,
Lui dit : "Pour un lapin votre chat est
vendu !"

HUSH-A-BYE, COLIN

HUSH-A-BYE, Colin, brother of mine,
Mustn't cry, hush-a-bye.
Mamma's up above,
Making cakes for you, love ;
And Daddy, downstairs,
Nice choc'late prepares.
Hush-a-bye, Colin, brother of mine,
Mustn't cry, hush-a-bye.

ON THE BRIDGE OF AVIGNON

ON the bridge of Avignon,
See them dance, see them dance !
On the bridge of Avignon,
They trip around, retire, advance ;
Gallant swains bend low, like this,
And once again do so, like this.
On the bridge of Avignon,
See them dance, see them dance !
On the bridge of Avignon,
They trip around, retire, advance ;
Fair ladies curtsy low, like this,
And once again do so, like this.
See them dance, see them dance,
On the bridge of Avignon.

BRING BACK YOUR SHEEP

ILL introduce—just wait awhile—
A charming maiden by yon stile.
"Ho ! pass this way," aloud we'll mock,
"Shepherdess, lead back your flock ;
Lead back, lead back, as you are told,
Your pretty sheep within the fold."

MOTHER MITCHELL

MOTHER MITCHELL one day lost her
pussy, alack !
And cried out of window : "Oh, who'll
bring her back ?"
Then old Gaffer Lustucru smilingly said :
"Your cat isn't lost—she is merely mis-
laid."
Mother Mitchell cried, hopefully gazing
around her ;
"My pussy not lost ! Oh, pray, have
you found her ?"
Then old Gaffer Lustucru answered herpat :
"If you give a reward you will soon get
your cat."
Said old Mother Mitchell : " 'Twould
not be amiss,
If you find me my pussy, to give you a
kiss."
But sly Gaffer Lustucru much preferred
gold,
And said : "For a rabbit your pussy is
sold !"

KEEL ROW

This is one of the North Country sea-songs that have grown up nobody knows how, so that both words and music are inherited from past generations without the authorship being known. The words in these verses move to the sound of the oars in the rowlocks of a moving boat.

As I came thro' Sandgate,
Thro' Sandgate, thro' Sandgate,
As I came thro' Sandgate
I heard a lassie sing.
O weel may the keel row,
The keel row, the keel row,
O weel may the keel row,
That my laddie's in.

O wha's like my Johnnie,
Sae leith, sae blythe, sae bonny?
He's foremost among the mony
Keel lads o' coaly Tyne;
He'll set and row so tightly,
Or in the dance, so sprightly,
He'll cut and shuffle sightly;
Tis true, were he not mine.

He wears a blue bonnet,
Blue bonnet, blue bonnet;
He wears a blue bonnet,
And a dimple in his chin.
And weel may the keel row,
The keel row, the keel row,
And weel may the keel row,
That my laddie's in.

ON A LITTLE LADY'S THIRD BIRTHDAY

This was written by the great modern poet William Watson to his little daughter, when she had been three times round the Sun, as her father daintily says.

MY tiny lady, can it
Be true that you and I,
On something called a planet,
Are somewhere in the sky?

Yes—and at such a tearing
And madcap speed we've spun,
That you, with dreadful daring,
Have thrice been round the Sun.

Nay, it yet more amazes,
That my far-venturing girl
Can be as fresh as daisies
After so wild a whirl!

And now 'neath western billow
The Sun is put to bed,
And you, too, on your pillow
Must lay a golden head.

Ah, tears—they come so quickly,
For grief so quickly gone!
Yet joys have rained as thickly,
For you to dream upon.

FOR THE FALLEN

The First World War, with its terrible slaughter of young men, many of them the finest spirits of their time, deeply moved all sympathetic and thoughtful men and women, and many poets tried to express the national feeling. It was felt widely that this poem in a wonderful degree put into a musical measure the pride and sorrow and remembrance of the country. The writer, Laurence Binyon, who died in 1943, was, besides being a poet, the author of excellent books on art, and one of the Keepers of Oriental prints in the British Museum. The poem was written for *The Times*.

WITH proud thanksgiving, a mother for
her children,
England mourns for her dead across the
sea.
Flesh of her flesh they were, spirit of her
spirit,
Fallen in the cause of the free.
Solemn the drums thrill; Death august and
royal
Sings sorrow up into immortal spheres.
There is music in the midst of desolation
And a glory that shines upon our tears.
They went with songs to the battle, they
were young,
Straight of limb, true of eye, steady and
aglow.
They were staunch to the end against odds
uncounted,
They fell with their faces to the foe.
They shall grow not old, as we that are
left grow old;
Age shall not weary them, nor the years
condemn.
At the going down of the sun and in the
morning
We will remember them.
They mingle not with their laughing comrades again;
They sit no more at familiar tables at
home;
They have no lot in our labour of the day-
time:
They sleep beyond England's foam.
But where our desires are and our hopes
profound,
Felt as a well-spring that is hidden from
sight,
To the innermost heart of their own land
they are known
As the stars are known to the Night.
As the stars that shall be bright when we
are dust,
Moving in marches upon the heavenly
plain,
As the stars that are starry in the time of
our darkness,
To the end, to the end, they remain.

HIS PILLAR

Robert Herrick's poetry was often light as thistledown, but he knew that, by its grace, it was likely to preserve his name in human memory, as indeed it has done. So he lets us know that in these verses, simple though they may be, he expects to leave for himself a lasting memorial.

ONLY a little more
I have to write,
Then I'll give o'er,
And bid the world good-night.

'Tis but a flying minute
That I must stay,
Or linger in it ;
And then I must away.

O Time, that cut'st down all,
And scarce leav'st here
Memorial
Of any men that were;

How many lie forgot
In vaults beneath,
And piecemeal rot
Without a fame in death!

Behold this living stone
I rear for me,
Ne'er to be thrown
Down, envious Time, by thee.

Pillars let some set up,
If so they please;
Here is my hope,
And my Pyramids.

NAPOLEON'S FAREWELL

Lord Byron put these words into the mouth of Napoleon when he surrendered and was sent into exile. They do not represent the true relations between Napoleon and France, for Napoleon was the betrayer of liberty in that great country; but they are the kind of thoughts which Napoleon, dazzled by the idea of personal glory, probably cherished.

FAREWELL to the land where the gloom of
my glory
Arose and o'ershadowed the earth with
her name;
She abandons me now, but the page of her
story,
The brightest or blackest, is filled with
my fame.
I have warred with a world which van-
quished me only
When the meteor of conquest allured
me too far;
I have coped with the nations which dread
me thus lonely,
The last single captive to millions in war.

Farewell to thee, France! when thy
diadem crowned me
I made thee the gem and the wonder of
earth;

But thy weakness decrees I should leave
as I found thee,
Decayed in thy glory, and sunk in thy
worth.
Oh, for the veteran hearts that were wasted
In strife with the storm, when their
battles were won;
Then the eagle, whose gaze in that moment
was blasted,
Had still soared with eyes fixed on
victory's sun!

Farewell to thee, France! but when
Liberty rallies
Once more in thy regions, remember me
then:
The violet still grows in the depth of thy
valleys;
Though withered, thy tear will unfold
it again.
Yet, yet, I may baffle the hosts that
surround us,
And yet may thy heart leap awake to
my voice;
There are links which must break in the
chain that has bound us,
Then turn thee and call on the Chief of
thy choice!

THE WORLD IS TOO MUCH WITH US.

This glorious sonnet, calling on us to appreciate the romantic loveliness of Nature, was written by Wordsworth in 1806. But is it true that the Greek, with his mythological poetry of Nature, loved the outdoor world and everything belonging to it more than we love it? Certainly no Greek drew more deeply than Wordsworth on the riches of Nature. Perhaps the verse was truer in Wordsworth's day than in ours, except that the first two lines may be always true.

THE world is too much with us; late
and soon,
Getting and spending, we lay waste
our powers:
Little we see in Nature that is ours;
We have given our hearts away, a sordid
boon!
This sea that bares her bosom to the moon;
The winds that will be howling at all
hours,
And are up-gathered now like sleeping
flowers;
For this, for everything, we are out of
tune;
It moves us not. Great God! I'd rather be
A Pagan suckled in a creed outworn;
So might I, standing on this pleasant lea,
Have glimpses that would make me less
forlorn;
Have sight of Proteus rising from the sea;
Or hear old Triton blow his wreathed
horn.

MY OLD FRIEND

It is curious that poetry has not provided many close and intimate studies of friendship. The romances of friendship have been told, but not much has been said about the ordinary effects of a friendly presence. This charming study is by that delightful Cambridge don Dr. Arthur Christopher Benson, who was graceful in prose, verse, and friendship.

It seems the world was always bright
With some divine unclouded weather
When we, with hearts and footsteps light,
By lawn and river walked together:

There was no talk of me and you,
Of theories with facts to bound them,
We were content to be and do,
And take our fortunes as we found them.

We spoke no wistful words of love,
No hint of sympathy and dearness,
Only around, beneath, above,
There ran a swift and subtle nearness.

Each inmost thought was known to each
By some impetuous divination:
We found no need of flattering speech,
Content with silent admiration.

I think I never touched your hand,
I took no heed of face or feature,
Only, I thought on sea or land
Was never such a gracious creature.

It seems I was not hard to please,
Where'er you led I needs must follow;
For strength you were my Hercules,
For wit and lustre my Apollo.

The years flew onward: stroke by stroke
They clashed from the impartial steeple,
And we appear to other folk
A pair of ordinary people.

One word, old friend: though fortune flies,
If hope should fail, till death shall sever,
In one dim pair of faithful eyes
You seem as bright, as brave as ever.

ODE TO THE WEST WIND

In this ode Shelley reaches the summit of his achievement as a poet. It was written in 1819, near Florence, when the west wind was collecting vapours for the autumnal rains. The poet, now 27, and with less than three years more to live, had run through a wildly impractical youth, and was beginning to feel his responsibility to the world as a poet, and this consciousness is here expressed with a magnificent poetic fervour. Two stanzas of the poem are here omitted.

O WILD West Wind, thou breath of
Autumn's being,
Thou, from whose unseen presence the
leaves dead
Are driven, like ghosts from an enchanter
fleeing.

Yellow, and black, and pale, and hectic red,
Pestilence-stricken multitudes: O thou,
Who chariotest to their dark wintry bed

The wingèd seeds, where they lie cold and
low,
Each like a corpse within its grave, until
Thine azure sister of the Spring shall blow

Her clarion o'er the dreaming earth, and fill
(Driving sweet buds like flocks to feed in
air)

With living hues and odours plain and hill:
Wild Spirit, which art moving every-
where;

Destroyer and preserver; hear, oh, hear;

If I were a dead leaf thou mightest bear;
If I were a swift cloud to fly with thee;
A wave to pant beneath thy power, and
share

The impulse of thy strength, only less free
Than thou, O uncontrollable! If even
I were as in my boyhood, and could be

The comrade of thy wanderings over
Heaven,

As then, when to outstrip thy skiey speed
Scarce seemed a vision; I would ne'er
have striven

As thus with thee in prayer in my sore need.
Oh, lift me as a wave, a leaf, a cloud!
I fall upon the thorns of life! I bleed!

A heavy weight of hours has chained and
bowed

One too like thee: tameless, and swift,
and proud.

Make me thy lyre, even as the forest is:
What if my leaves are falling like its own!
The tumult of thy mighty harmonies

Will take from both a deep, autumnal
tone,

Sweet though in sadness. Be thou, Spirit
fierce,

My spirit! Be thou me, impetuous one!

Drive my dead thoughts over the universe
Like withered leaves to quicken a new birth!
And, by the incantation of this verse,

Scatter, as from an unextinguished hearth
Ashes and sparks, my words among man-
kind!

Be through my lips to unawakened earth

The trumpet of a prophecy! O, Wind,
If Winter comes, can Spring be far behind?

LITTLE VERSES FOR VERY LITTLE PEOPLE

THE LOVABLE CHILD

FRISKY as a lambkin,
 Busy as a bee :
 That's the kind of little girl
 People like to see.

Modest as a violet,
 As a rosebud sweet:
 That's the kind of little girl
 People like to meet.

Bright as a diamond,
 Pure as any pearl:
 Everyone rejoices in
 Such a little girl.

Happy as a robin,
 Gentle as a dove:
 That's the kind of little girl
 Everyone will love.

Fly away and seek her,
 Little song of mine,
 For I choose that very girl
 As my valentine. Emilie Poulsson



FAITHLESS SALLY BROWN

YOUNG Ben he was a nice young man,
 A carpenter by trade;
 And he fell in love with Sally Brown,
 That was a lady's maid.

But as they fetched a walk one day
 They met a press-gang crew;
 And Sally she did faint away,
 While Ben he was brought to.

The Boatswain swore with wicked words,
 Enough to shock a saint,
 That, though she did seem in a fit,
 'Twas nothing but a feint.

"Come, girl," said he, "hold up your head,
 He'll be as good as me;
 For when your swain is in our boat
 A boatswain he will be."

So when they'd made their game of her,
 And taken off her elf,
 She roused, and found she only was
 A coming to herself.

"And is he gone, and is he gone?"
 She cried, and wept outright;
 "Then I will to the waterside,
 And see him out of sight."

A waterman came up to her;
 "Now, young woman," said he,
 "If you weep on so you will make
 Eye-water in the sea."

"Alas! They've taken my beau Ben
 To sail with old Benbow."
 And her woe began to run afresh
 As if she'd said Gee woe!

Says he, "They've only taken him
 To the Tender ship, you see."
 "The Tender-ship!" cried Sally Brown.
 "What a hard-ship that must be!"

Now Ben had sailed to many a place
 That's underneath the world;
 But in two years the ship came home,
 And all her sails were furled.

But when he called on Sally Brown,
 To see how she went on,
 He found she'd got another Ben,
 Whose Christian name was John.

"Oh, Sally Brown! Oh, Sally Brown!
 How could you serve me so?
 I've met with many a breeze before,
 But never such a blow."

Then reading on his bacco box,
 He heaved a bitter sigh;
 And then began to eye his pipe,
 And then to pipe his eye.

And then he tried to sing "All's well,"
 But could not, though he tried;
 His head was turned, and so he chewed
 His pigtail till he died.

His death, which happened in his berth,
 At forty-odd befell;
 They went and told the sexton, and
 The sexton tolled the bell. Thomas Hood

THE OWL AND THE EEL

THE owl and the eel and the warming-
 pan,
 They went to call on the soap-fat man.
 The soap-fat man he was not within:
 He'd gone for a ride on his rolling-pin.
 So they all came back by the way of the
 town,
 And turned the meeting-house upside
 down. Laura E. Richards

CITY MOUSE AND GARDEN MOUSE

THE city mouse lives in a house,
 The garden mouse lives in a bower,
 He's friendly with the frogs and toads,
 And sees the pretty plants in flower.

The city mouse eats bread and cheese,
 The garden mouse eats what he can;
 We will not grudge him seeds and stocks,
 Poor little timid, furry man.

Christina Georgina Rossetti

LITTLE VERSES FOR VERY LITTLE PEOPLE

MOON, SO ROUND AND YELLOW

MOON, so round and yellow,
Looking from on high,
How I love to see you
Shining in the sky.
Oft and oft I wonder,
When I see you there,
How they get to light you,
Hanging in the air:

Where you go at morning,
When the night is past,
And the sun comes peeping
O'er the hills at last.
Sometime I will watch you
Slyly overhead,
When you think I'm sleeping
Snugly in my bed.

Matthias Barr

BABY SLEEPS

THE baby wept;
The mother took it from the
nurse's arms,
And hushed its fears, and soothed its vain
alarms,
And baby slept.

Again it weeps,
And God doth take it from the mother's
arms,
From present griefs, and future unknown
harms,
And baby sleeps.

Samuel Hinds

LETTY'S GLOBE

WHEN Letty had scarce passed her third
glad year,
And her young artless words began to
flow,
One day we gave the child a coloured
sphere
Of the wide earth, that she might mark
and know,
By tint and outline, all its sea and land.
She patted all the world; old empires
peeped
Between her baby fingers; her soft hand
Was welcome at all frontiers. How she
leaped
And laughed and prattled in her world-
wide bliss:
But when we turned her sweet unlearned
eye
On our own isle she raised a joyous cry:
Oh! yes, I see it, Letty's home is there!
And, while she hid all England with a kiss,
Bright over Europe fell her golden hair.

Charles Tennyson Turner

THE SHEPHERD

How sweet is the shepherd's sweet lot.
From the morn to the evening he
strays;
He shall follow his sheep all the day,
And his tongue shall be filled with praise.

For he hears the lamb's innocent call,
And he hears the ewe's tender reply;
He is watchful while they are at peace,
For they know when their shepherd is
nigh.

William Blake

THE FROST LOOKED FORTH

THE Frost looked forth one still, clear
night,
And whispered: "Now I shall be out of
sight,
So through the valley and over the height
In silence I'll take my way;
I'll not go on like that blustering train,
The wind and the snow, the hail and the
rain;
They make so much bustle and noise in
vain,
But I'll be as busy as they."

Then he flew to the mountain and
powdered its crest;
He lit on the trees, and their boughs he
dressed
In diamond beads, and over the breast
Of the quivering lake he spread
A coat of mail, that it need not fear
The downward point of many a spear
That hung on its margin far and near,
Where a rock could rear its head.

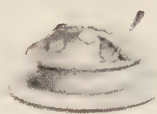
He went to the windows of those who slept,
And over each pane like a fairy crept;
Wherever he breathed, wherever he stept,
By the light of the moon were seen
Most beautiful things: there were flowers
and trees,
There were bevvies of birds and swarms of
bees,
There were cities with temples and towers,
and these
All pictured in silver sheen.

But he did one thing that was hardly fair,
He peeped in the cupboard, and finding
there
That all had forgotten for him to prepare,
"Now, just to set them a-thinking,
I'll bite this basket of fruit," said he;
"This costly pitcher I'll burst in three,
And the glass of water they've left for me
Shall *teich* to tell them I'm drinking."

Hannah Flagge Gould

THE REAL HISTORY OF THE APPLE-PIE

A APPLE-PIE, B bit it,
C cut it, D dealt it,
E ate it, F fought for it,
G got it, H had it,
I iced it, J joked about it,
K kept it, L longed for it,
M mourned for it,
N nodded at it,
O opened it, P peeped in it,
Q quartered it, R ran for it,
S stole it, T took it,
U upset it, V viewed it,
W wanted it, X expected it,
Y yearned for it, Z had a zest for it;
And when they came to ampersand
They all desired a piece in hand.



At last they every one agreed
Upon the apple-pie to feed;
But as there seemed to be so many
Those who were last might not have any
Unless some method could be thought out
To stop their squabbles being fought out.
They all agreed to stand in order
Around the apple-pie's fine border,
Take turn as they in school-book stand,
From great A down to ampersand,
In equal parts the pie dividing,
A fair plan they were all deciding,

Says A, give me a good large slice,
Says B, a little bit, but nice,
Says C, cut me a piece of crust,
Take it, says D, it's dry as dust,
Says E, I'll eat it fast, I will,
Says F, I vow I'll have my fill,
Says G, give it me good and great,
Says H, a little bit I hate,
Says I, it's ice I must request,
Says J, the juice I love the best,
Says K, let's keep it up above,
Says L, the border's what I love,
Says M, it makes your teeth to chatter,
N said, it's nice, there's nought the matter,
O others' plates with grief surveyed,
P for a large piece begged and prayed,
Q quarrelled for the topmost slice,
R rubbed his hands and said "it's nice,"
S silent sat, and simply looked,
T thought, and said, it's nicely cooked,
U understood the fruit was cherry,
V vanished when they all got merry,
W wished there'd been a quince in,
X here explained he'd need convincing,
Y said, I'll eat, and yield to none,
Z, like a zany, said he'd done,
While ampersand purloined the dish,
And for another pie did wish.

PEMMY WAS A PRETTY GIRL

PEMMY was a pretty girl,
But Fanny was a better;
Pemmy looked like any churl
When little Fanny let her.
Pemmy had a pretty nose,
But Fanny had a better;
Pemmy oft would come to blows,
But Fanny would not let her.
Pemmy had a pretty doll,
But Fanny had a better;
Pemmy chattered like a poll
When little Fanny let her.
Pemmy had a pretty song,
But Fanny had a better;
Pemmy would sing all day long,
But Fanny would not let her.
Pemmy loved a pretty lad,
But Fanny loved a better;
And Pemmy wanted for to wed,
But Fanny would not let her.

THERE'S NOTHING LIKE A DADDY

I do not want a puppy-dog, although I
know they're nice,
For my papa can romp with me in ways
that quite suffice.
He'll bark just like a St. Bernard, and
like a mastiff growl,
And you would feel like laughing when he
imitates its howl.
I do not want a pussy-cat. I like cats
pretty well.
But Daddy beats them all, and plays
better than I can tell.
He'll purr and hiss like anything; his
mewing you should hear;
It makes more noise than any cat, and, oh,
I shake with fear!
I do not want a pony small. Of course
they're lots of fun,
But what's the use of ponies when you're
my dear daddy's son?
He takes me on his shoulders broad, or
puts me on his knees,
And sets me off a-galloping as madly as
you please.
In short, I don't want anything as long as
Daddy's here;
He's pretty much of everything, and don't
get out of gear.
And best of all the things boys have, I'm
sure you'll find it true,
There's nothing like a daddy who will
always play with you!

LITTLE VERSES FOR VERY LITTLE PEOPLE

MR. NOBODY

I KNOW a funny little man,
 As quiet as a mouse,
 Who does the mischief that is done
 In everybody's house.
 There's no one ever sees his face,
 And yet we all agree
 That every plate we break was cracked
 By Mr. Nobody.
 'Tis he who always tears our books,
 Who leaves the door ajar;
 He pulls the buttons from our shirts,
 And scatters pins afar.
 That squeaking door will always squeak,
 For, prithee, don't you see,
 We leave the oiling to be done
 By Mr. Nobody.
 He puts damp wood upon the fire,
 That kettles cannot boil;
 His are the feet that bring in mud
 And all the carpets soil.
 The papers always are mislaid:
 Who had them last but he?
 There's no one tosses them about
 But Mr. Nobody.
 The finger-marks upon the door
 By none of us are made;
 We never leave the blinds unclosed
 To let the curtains fade.
 The ink we never spill, the boots
 That lying round you see
 Are not our boots; they all belong
 To Mr. Nobody.

THE WASP AND THE BEE

A WASP met a bee that was buzzing by,
 And he said: "Little cousin, can
 you tell me why
 You are loved so much better by people
 than I?"
 "My back shines as bright and yellow as
 gold,
 And my shape is most elegant, too, to
 behold;
 Yet nobody likes me for that, I am told."
 "Ah, cousin," the bee said, "'tis all very
 true;
 But if I had half as much mischief to do,
 Indeed they would love me no better than
 you.
 "You have a fine shape and a delicate
 wing;
 They own you are handsome; but then
 there's one thing
 They cannot put up with, and that is your
 sting.

"My coat is quite homely and plain, as
 you see,
 Yet nobody ever is angry with me,
 Because I'm a humble and innocent bee."

From this little story let people beware,
 Because, like the wasp, if ill-natured they
 are
 They will never be loved if they're ever
 so fair.

THE KILKENNY CATS

THERE were once two cats of Kilkenny,
 Each thought there was one cat too
 many;
 So they fought and they fit,
 And they scratched and they bit,
 Till, excepting their nails
 And the tips of their tails,
 Instead of two cats there weren't any.

THE LITTLE MOUSE

I HAVE seen you, little mouse,
 Running all about the house,
 Through the hole your little eye
 In the wainscot peeping sly,
 Hoping soon some crumbs to steal,
 To make quite a hearty meal.
 Look before you venture out,
 See if pussy is about;
 If she's gone you'll quickly run
 To the larder for some fun;
 Round about the dishes creep.
 Taking into each a peep,
 To choose the daintiest that's there,
 Spoiling things you do not care.

WHAT CAN THE MATTER BE?

O DEAR, what can the matter be?
 O dear, what can the matter be?
 O dear, what can the matter be?
 Johnnie's so long at the fair.

He promised to buy me a bunch of blue
 ribbon,
 He promised to buy me a bunch of blue
 ribbon,
 He promised to buy me a bunch of blue
 ribbon,
 To tie up my bonnie brown hair.

He promised to bring me a basket of
 posies,
 A garland of lilies, a garland of roses,
 A little straw hat to set off the blue
 ribbons
 That tie up my bonnie brown hair.

THE OLD WOMAN AND HER PIG

AN old woman was sweeping her house,
and she found a crooked sixpence.

"What," she said, "shall I do with
this little sixpence? I
shall go to market and
buy a little pig."

As she was coming home
she came to a stile. The
piggy would not go over
the stile. She went a little
farther, and she met a dog, so she said
to the dog:



Dog, dog, bite pig;
Piggy won't get over the stile,
And I shan't get home tonight!

But the dog would not.

She went a little farther, and she met a
stick. So she said:

Stick, stick, beat dog;
Dog won't bite pig;
Piggy won't get over the stile,

And I shan't get
home to-night!

*But the stick would
not.*

She went a little
farther, and she met
a fire. So she said:

Fire, fire, burn
stick;

Stick won't beat dog;
Dog won't bite pig;
Piggy won't get over the stile,
And I shan't get home tonight!

But the fire would not.

She went a little farther, and she met
some water. So she said:

Water, water, quench fire;
Fire won't burn stick;
Stick won't beat dog;
Dog won't bite pig;
Piggy won't get over the stile,
And I shan't get home tonight!

But the water would not.

She went a little farther, and she
met an ox. So she said:

Ox, ox, drink water;
Water won't quench
fire;

Fire won't burn stick;
Stick won't beat dog;
Dog won't bite pig;
Piggy won't get over
the stile,

And I shan't get
home tonight!

But the ox would not.



She went a little farther, and she met a
butcher. So she said:

Butcher, butcher, kill ox;
Ox won't drink water;
Water won't quench fire;
Fire won't burn stick;
Stick won't beat dog;
Dog won't get over the stile,
And I shan't get home tonight!

But the butcher would not.

She went a little farther, and met a
rope. She said:

Rope, rope,
hang butcher;
Butcher won't
kill ox;

Ox won't drink
water;

Water won't quench fire;
Fire won't burn stick;
Stick won't beat dog;
Dog won't bite pig;
Piggy won't get over the stile,
And I shan't get home tonight!

But the rope would not.

She went a little farther, and she met a
rat. So she said:

Rat, rat, gnaw rope;
Rope won't hang butcher;
Butcher won't kill ox;
Ox won't drink water;
Water won't quench fire;
Fire won't burn stick;
Stick won't beat dog;
Dog won't bite pig;
Piggy won't get over the stile,
And I shan't get home tonight!

But the rat would not.

She went a little farther, and
she met a cat, so she said:

Cat, cat, kill rat;
Rat won't gnaw rope;
Rope won't hang butcher;
Butcher won't kill ox;
Ox won't drink water;
Water won't quench fire;
Fire won't burn stick;
Stick won't beat dog;
Dog won't bite pig;
Piggy won't get over
the stile,

And I shan't get home
tonight!

But the cat said to her,
"If you will go to yon-
der cow, and fetch me a
saucer of milk, I will



kill the rat." So away went the old woman to the cow, and said:

Cow, cow, give me a saucer of milk;

Cat won't kill rat;

Rat won't gnaw rope;

Rope won't hang butcher;

Butcher won't kill ox;

Ox won't quench fire;

Fire won't burn stick;

Stick won't beat dog;

Dog won't bite pig;

Piggy won't get over the stile,

And I shan't get home tonight!

But the cow said to her, "If you will go to yonder haymakers, and fetch me a wisp of hay, I'll give you the milk." So away went the old woman to the haymakers, and said;

Haymakers, give me a wisp of hay;

Cow won't give milk;

Cat won't kill rat;

Rat won't gnaw rope;

Rope won't hang butcher;

Butcher won't kill ox;

Ox won't drink water;

Water won't quench fire;

Fire won't burn stick;

Stick won't beat dog;

Dog won't bite pig;

Piggy won't get over the stile,

And I shan't get home tonight!



But the haymakers said to her, "If you will go to yonder stream, and fetch us a bucket of water, we'll give you the hay." So away the old woman went.

But when she got to the stream she found the bucket was full of holes. So she covered the bottom with pebbles and then filled the bucket with water, and she went back with it to the hay. As soon as the cow had eaten the hay she gave the old woman the milk; and away she went with it in a saucer to the cat. As soon as the cat had lapped up the milk;

The cat began to kill the rat;

The rat began to gnaw the rope;

The rope began to hang the butcher;

The butcher began to kill the ox;

The ox began to drink the water;

The water began to quench the fire;

The fire began to burn the stick;

The stick began to beat the dog;

The dog began to bite the pig;



The little pig in a fright jumped over the stile;

So the old woman got home that night!

THE OLD MAN WHO LIVED IN A WOOD

THERE was an old man who lived in a wood,

As you may plainly see;

He said he could do as much work in a day

As his wife could do in three.

"With all my heart, the old woman said,

If that you will allow,

Tomorrow you'll stay at home in my stead

And I'll go and drive the plough.

"But you must milk the Tidy cow,

For fear that she go dry;

And you must feed the little pigs

That are within the sty;

And you must mind the speckled hen,

For fear she lay away;

And you must reel the spool of yarn

That I spun yesterday."

The old woman took a staff in her hand

And went to drive the plough;

The old man took a pail in his hand,

And went to milk the cow;

But Tidy hunched and Tidy flinched,

And Tidy broke his nose,

And Tidy gave him such a blow

That the tears ran down to his toes.

"High, Tidy, ho! High, Tidy, high!

Tidy, do stand still!

If ever I milk you, Tidy, again,

'Twill be sore against my will."

He went to feed the little pigs

That were within the sty;

He hit his head against the beam,

And he made the tears to fly.

He went to mind the speckled hen,

For fear she'd lay astray,

And he forgot the spool of yarn

His wife spun yesterday.

So he swore by the sun and the moon and the stars,

And the green leaves on the tree,

If his wife didn't do a day's work in her life

She should ne'er be ruled by he.

NURSERY RHYMES

DOODLE, doodle, doo,
The princess lost her shoe;
Her highness hopped,
The fiddler stopped,
Not knowing what to do.

A FARMER's dog leaped over the stile,
His name was little Bingo;
There was B with an I, I with an N,
N with a G, G with an O,
There was B, I, N, G, O,
And his name was little Bingo.

THERE was an old man in a tree
Who was horribly bored by a bee;
When they said, "Does it buzz?"
He replied, "Yes, it does!"
It's a regular brute of a bee!"

LITTLE Polly Flinders
Sat among the cinders,
Warming her pretty little toes;
Her mother came and caught her,
And whipped her little daughter
For spoiling her nice new clothes.

SEE-SAW, Margery Daw,
Baby shall have a new master;
She shall have but a penny a day
Because she can't work any faster.

SHALL I sing? says the Lark,
Shall I bloom? says the Flower;
Shall I come? says the Sun,
Or shall I? says the Shower.

Sing your song, pretty Bird,
Roses bloom for an hour;
Shine on, dearest Sun;
Go away, naughty Shower.

COCK ROBIN got up early,
At the break of day,
And went to Jenny's window
To sing a roundelay.

He sang Cock Robin's love
To little Jenny Wren,
And when he got unto the end
Then he began again.

THE rose is red, the violet's blue,
The pink is sweet, and so are you!

YOUNG lambs to sell!
Young lambs to sell!
If I'd as much money as I could tell
I never would cry Young lambs to sell!

CURLY LOCKS! Curly Locks! wilt thou
be mine?
Thou shalt not wash dishes, nor yet feed
the swine;
But sit on a cushion, and sew a fine seam,
And feed upon strawberries, sugar, and
cream.

THERE was an old woman who lived in a
shoe;
She had so many children she didn't know
what to do;
She gave them some broth without any
bread,
She whipped them all round, and sent
them to bed.

FIRST the farmer sows his seeds,
Then he stands and takes his ease;
Stamps his foot and claps his hands,
And turns him round to view his lands.

PETER PIPER picked a peck of pickled
pepper;
A peck of pickled pepper Peter Piper
picked;
If Peter Piper picked a peck of pickled
pepper,
Where's the peck of pickled pepper Peter
Piper picked?

A LITTLE old man and I fell out;
How shall we bring this matter
about?
Bring it about as well as you can;
Get you gone, you little old man.

WHAT are little boys made of, made of?
What are little boys made of?
Snaps and snails and puppy-dogs' tails;
And that's what little boys are made of,
made of.

What are little girls made of, made of?
What are little girls made of?
Sugar and spice, and all that's nice;
And that's what little girls are made of,
made of.

LAVENDER blue and rosemary green,
When I am king you shall be queen.
Call up my maids at four of the clock,
Some to the wheel and some to the rock,
Some to make hay and some to thresh corn,
And you and I will keep the bed warm.

THERE was a king met a king
 In a narrow lane.
 Says this king to that king:
 'Where have you been?'
 'Oh, I've been a-hunting
 With my dog and my doe.'
 'Pray lend him to me,
 That I may do so.'
 'There's the dog, *take* the dog.'
 'What's the dog's name?'
 'I've told you already.'
 'Pray tell me again.'

□ □
 PUSSY sits beside the fire:
 How can she be fair?
 In comes the little dog:
 "Pussy, are you there?"
 So, so, Mistress Pussy,
 Pray, how do you do?"
 "Thank you, thank you, little dog,
 I'm very well just now."

□ □
 THERE was a man, and he went mad,
 And he jumped into a biscuit bag;
 The biscuit bag it was so full,
 So he jumped into a roaring bull;
 The roaring bull it was so fat,
 So he jumped into a gentleman's hat;
 The gentleman's hat it was so fine,
 So he jumped into a bottle of wine;
 The bottle of wine it was so dear,
 So he jumped into a barrel of beer;
 The barrel of beer it was so thick,
 So he jumped into a walking-stick;
 The walking-stick it was so narrow,
 So he jumped into a wheelbarrow;
 The wheelbarrow began to crack,
 So he jumped into a haystack;
 The haystack began to blaze,
 So he did nothing but cough and sneeze!

□ □
 JOHN COOK he had a little grey mare; he,
 haw, hum!
 Her back stood up, and her bones they
 were bare; he, haw, hum!
 John Cook was riding up Shunter's Bank;
 he, haw, hum!
 And there his nag did kick and prank;
 he, haw, hum!
 John Cook was riding up Shunter's Hill;
 he, haw, hum!
 His mare fell down and she made her will;
 he, haw, hum!
 The bridle and saddle were laid on the
 shelf; he, haw, hum!
 If you want any more you may sing it
 yourself; he, haw, hum!

A BUTTERFLY perched on a mossy brown
 stile,
 And a little maid saw him and cried, with
 a smile:
 "O beautiful butterfly, yellow and blue,
 Stop, stop; let me sit on the stile with
 you!"
 But the beautiful butterfly, yellow and
 blue,
 Opened his wings, and away he flew;
 And when he'll return I really can't say,
 But the little maid sits on the stile to
 this day!

□ □
 I KNOW a child, and who she is
 I'll tell you by and by.
 When Mamma says Do this, or that,
 She says What for? and Why?
 She'd be a better child by far
 If she would say I'll try.

□ □
 OLD Abram Brown is dead and gone,
 You'll never see him more;
 He used to wear a long brown coat
 That buttoned down before.

□ □
 AS I was going to sell my eggs
 I met a man with crooked legs;
 Crooked legs and turned-up toes.
 I tripped up his heels, and he fell on his
 nose.

□ □
 A LITTLE cock sparrow sat on a green
 tree,
 And he chirruped, he chirruped, so merry
 was he.
 A naughty boy came with his wee bow
 and arrow,
 Determined to shoot this little cock
 sparrow.

"This little cock sparrow shall make me
 a stew,
 And his giblets shall make me a little pie
 too."
 "Oh, no," said the sparrow, "I won't
 make a stew!"
 So he flapped his wings, and away he flew.

□ □
 HECTOR PROTECTOR was dressed all in
 green;
 Hector Protector was sent to the Queen;
 The Queen did not like him,
 No more did the King;
 So Hector Protector was sent back again.

The Story of the Most Beautiful Book in the World

Carrying on the Great Ideal

WE have read together the wonderful narrative of the Bible, the life of Jesus, the great story of Paul. We have seen how the ideas of Jesus, carried to Antioch and Rome by His servant Paul, opposed by all that hate, cruelty, and evil could do to destroy them, endured through the decay of the Roman Empire, and became the chief influence in the progress of the world when Rome had become but the shadow of a name. For us it remains to carry on the work that began in Galilee, that Paul brought to Europe, and that men have built up through ages of suffering and toil. It is for us to carry forward the influence of Jesus by the gentleness of our lives, to spread goodness and hopefulness everywhere, to keep for ever shining in our lives, undimmed and unbroken, the beautiful Light of the World.

CHRISTIANITY IN THE WORLD

WE have traced what happened to Christianity after the disciples went forth into many parts of the world to proclaim the good news; how two chief churches were formed in Rome and in Constantinople; how the Church of Rome grew to be a most powerful institution under the Pope, and a rival to the government of nations by their kings. Gradually the Church undertook to fix what all Christians should believe, and what ought not to be believed in religion; and this was followed by punishments, including death, for Christians who doubted whether some of the Church's teachings were the pure teachings of Christ.

The differences of opinion and belief as to what Christianity is, and the use of force to secure uniformity, make up one of the saddest chapters to be recorded in human history.

We cannot conceive of Jesus doing what was done by the Churches adopting his name. He was no persecutor; he was content to be persecuted. In all the Christian Churches of all ages there have been men truly reflecting Christ's spirit, and they, by whatever name they may be called, are his true Church; but also in all the churches, in churches of almost every creed, there have been men with a persecuting spirit, and unfortunately they have often been the leading spirits, harsh and implacable.

The truth is they simply did not understand the mind of Christ. So, within His Church (within the Protestant churches as in others) came wars and bloodshed, massacres and burnings alive—a terrible retrospect! All this came about because men were not allowed the liberty to be honest in their inmost beliefs.

We shall be unjust in looking back on these things if we think it was only one part of the Church that was cruel. Cruelty was common. Gentleness was at a discount among men who had power. Religion was infected by it, even the religion called by the name of the Lord of Love. Only gradually has the mind that was in Jesus dominated His Church, as only gradually is it dominating the world.

The difficulty began when the Church attempted by force to crush out such forms of Christianity as did not quite agree with the forms it had said were the only right forms. It is impossible to conquer thought and belief by force. Persecution only made men who were seeking the truth the more resolute. They died gladly for the faith that was dear to them, as the earlier Christians had died rather than submit to the official religion of pagan Rome.

As time went on men of a thoughtful and independent tone of mind claimed to go back to the teachings of Scripture to find out what Christianity was as it was taught by Christ and the Apostles.

GREAT FIGURES OF THE OLD TESTAMENT · THE LIFE OF JESUS

The man who began to preach a greater freedom of inquiry was a learned English priest named John Wycliffe, who lived most of his life while Edward the Third was King of England. He has been called the Morning Star of the Reformation. It grieved him to see that so many of the clergy seemed to care little for the souls of the people, so he sent out his disciples to preach the Gospel for the truth's sake, without earthly reward.

HOW WYCLIFFE'S FOLLOWERS WERE PERSECUTED IN ENGLAND

He also translated the Scriptures so that the people could read them—the Bible in England having been available only in Latin for the learned to read. His teaching made the rulers of the Church angry, though it was pleasing enough to some of the great lords, such as John of Gaunt; and therefore they protected Wycliffe from the bishops, who would have had him punished as a heretic. And so John Wycliffe himself died in peace.

But after his death his disciples in England, who were called Lollards—from a word which means to chant or sing—were persecuted as heretics, and Wycliffe's doctrines were declared to be heresies; and a fearful thing was done, his body being taken from the grave and burned, and the ashes cast into the river. Yet his doctrines came to be held in other lands, and there arose in Bohemia a teacher named John Huss, who taught the things that Wycliffe taught; and many of the people of Bohemia believed these things and held them for truth.

FIERCE WARS THAT WERE CAUSED BY AN EMPEROR'S BROKEN PROMISE

In those days there was held a great Council at Constance, in Switzerland, to put an end to the quarrels that were going on as to which of two men who claimed to be pope was really pope, and Huss was bidden to come before this Council to answer for his doctrines. He would not have gone except that the Emperor Sigismund gave him a written promise that he should be suffered to come and to depart unhurt. But the emperor, to his great shame, broke his word, and Huss was condemned to be burned. The folk of Bohemia were very angry at these things, and would in no wise deny the truth of what Huss had taught them; and there followed long and fierce wars, in which the Hussites were often victorious.

Among the men who sought to spread knowledge and gain greater freedom for honest thought, but yet drew back when they feared that great and violent change might come, the most famous and the cleverest, was Erasmus, the Dutchman who greatly loved Sir Thomas More, and was beloved by him.

The learned Erasmus was born in 1466 at Rotterdam, in Holland. It was meant that he should be a monk, and he was brought up among monks. Yet though he became a priest, a monk he would not be, but spent his time in studying and lecturing and talking and writing. His witty words threw scorn and contempt upon corruption and superstition and all manner of folly, and his wise words taught men to understand the writings of Paul and the evangelists, and to insist on the right interpretation of them.

At last a time was reached when many men felt that a firm stand must be made at any cost against religion being imposed on them by authority. The greatest of these was Martin Luther, whose name is most closely associated with the widespread, epoch-making movement known in history as the Reformation.

THE MINER'S SON WHO LED THE REFORMATION IN GERMANY

Luther was very humbly born, for his father was no more than a poor miner; yet, being a frugal man with a wise wife, and both of them God-fearing folk, they prospered enough to be able to send their son to school, which poor folk could not always do in those days. The boy, being clever, did so well in his studies that he hoped to become a lawyer; but his thoughts were turned more zealously to religion, as the story goes, by the sudden death of his dearest friend.

Therefore he resolved to become a monk, thinking that it was only in the quiet of the cloister that a man could lead a truly spiritual and holy life. Then he was chosen to be one of the teachers at the new university of Wittenberg, in Saxony; and there it was not long before men began to flock to his lectures and his sermons, as he said strange things that went home to people's hearts, for he loved truth and spoke it fearlessly.

But as yet he had not thought at all that any man would ever call him heretic; for there was nothing that he taught or believed which he had not found either in

the words of Paul or of the great Bishop St. Augustine, after whom the order of monks to which Martin Luther belonged was named.

It was a sore grief to him when he found that the interpretation which he gave to the Bible was not that of the Church, and a greater grief still when he felt compelled to denounce the practice of offering forgiveness for sins for money, as was sometimes done.

In the end the authorities of the Church found it necessary to oppose Luther with all their power; and the Pope sent a bull, which means a paper with a seal fixed to it, declaring that Luther was a heretic (an unbeliever), and Luther burned the Pope's bull before the citizens of Wittenberg, who, for the most part, were on his side. This act was as much as to say that he denied the Pope's authority altogether.

Just at this time what was called a Diet, an assembly of the princes and nobles of the German Empire, was held at Worms, and Luther was bidden to appear before it and answer for himself. Thither he went, though none knew whether his fate might not be that of John Huss; many men urged him not to risk his life, seeing that Duke George of Saxony was bitter against him.

But Luther said: "I will go, though it rain Duke Georges," and he stood before the gathered princes and nobles and bishops, and showed a great courage, saying that the words charged against him were true, and while he held them to be true he would not withdraw them, but would himself be true to his conscience. "Here stand I," he said boldly, "God help me! I can do no other."

However, before the Diet passed its judgment against him, declaring him an

outlaw, certain of his friends made a prisoner of him and carried him off secretly to a secure place where none could find him, and so his life was saved. From that time the princes of the German Empire were divided, some being for Luther and others for the Pope; and those who were for Luther would not yield him up.

It was while he was in hiding that Luther began his translation of the Bible into the German tongue, as Wycliffe had translated it into English; but now that the printing press had been invented thousands of people had the chance of reading Luther's Bible where only one had had the chance of reading Wycliffe's, and Luther's followers in Germany multiplied.

It was because they wanted to *protest* against oppression that Luther's followers were first called Protestants. All the rest of his days, throughout the Protestant parts of Germany, no man was held in such honour as Martin Luther. Though we should not find it possible to accept all his views today, he stood for much of

what we now believe. By the great influence he had he used to keep the peace between his own followers and the zealous Romanists, though after he died they went to war with each other.

Now, although it is certain that there was none other who wrought so mighty a work as Luther, there were others who set out on the same path. One of these was the Swiss Ulrich Zwingli, of Zurich, who, before Martin had begun, was already teaching much that Luther was to preach.

But in some matters he departed from the Roman doctrine even more than Luther, so that Luther himself would not admit him to his friendship. However, the



READING FROM A CHAINED BIBLE IN ELIZABETHAN DAYS

men who spread the reformed doctrine in England and Scotland were disciples of Zwingli rather than of Luther. Zwingli died as a soldier in defence of Zurich.

Soon afterwards there arose another champion of the Reformation, John Calvin, Frenchman, who lived for the most part at Geneva. The teaching of Calvin was very stern, and he ruled with a harsh discipline over the manner of life of his followers, and set up a new form of rule for the Church, not by bishops, but by presbyters, so that the name given to it is Presbyterianism. He, too, differed very much from Luther, and outside of England the Protestants came to be generally divided into Calvinists and Lutherans.

In England the Reformation took a different way, for its leaders held that in rejecting the Pope's authority they were in no wise ceasing to be a branch of the Catholic Church, but were a branch of the Church which had freed itself from errors. They suffered men to hold different opinions about many doctrines, so that some might incline towards Luther and others towards Calvin if, in their manner of worship, they gave heed to the ordinances of the Church as declared by the law.

THE COURSE OF THE REFORMATION IN ENGLAND AND SCOTLAND

The man who did most in making changes, and in checking them from extremes, was Thomas Cranmer, the Archbishop of Canterbury, who died at the stake in the terrible reign of Queen Mary.

In Scotland the Reformation was given its shape for the most part by a great disciple of Calvin, John Knox. He was a priest in the Roman Church when he was taught Luther's ideas by George Wishart, who became a Protestant martyr. By reason of his zeal and his powerful preaching the Protestant Scots, who had rebelled and were besieged at St. Andrews, took John Knox for their pastor. And so it was that when the French came to help Mary they took St. Andrews, and John Knox was carried off as a prisoner.

By the French Knox was sent to the galleys for a time and afterwards removed to prison. But when he was set free he returned to Scotland, and from that time to the day of his death all the reformers looked to him as their guide. He was a stern man, hating all things that had to do with vanity, and when the young Queen Mary came back to Scotland from

France he had no fear of reproving her and all her courtiers, as Elijah reproved King Ahab, speaking words bold and bitter because she was much given to gaiety.

Knox taught a stern religion, and made the Scots, who were ever a rough and hardy people, a sterner folk than before; but he wrought a great work among them by the care he took for the teaching of children all over the land. He died full of years and honours, and, though for his hardness men scarcely love his memory, they still hold it in reverence.

THE LONG STRUGGLE IN ENGLAND FOR RELIGIOUS FREEDOM

Since that time Britain has been on the whole a Protestant country. Only gradually, however, did it allow full religious freedom to those who held the Roman Catholic faith, for early Protestantism was tainted by the idea of repressing beliefs contrary to its own. It was not until nearly our own time, indeed, that full liberty of religion was established throughout the land, and the victory completely won.

Growing freedom in religion has been followed by a growth of various forms of worship and differences in belief, though now there is a tendency towards greater unity. It is felt increasingly that in what is most essential, as judged by the teachings and life of Jesus, Christians are of one Church inwardly, though they may call themselves by different names.

In one respect all branches of the Church of Christ have followed the example of the earliest Christians, and have sought to spread the faith throughout all lands. That was a form of service the Roman Catholic Church has never lost sight of, and its missionary record has many noble pages.

HOW THE SPIRIT OF CHRISTIANITY HAS QUIETLY MADE ITS WAY

Christianity, in its many forms, is by far the most widely diffused of all religions. Other faiths are found widely held in large territories, as with Mohammedanism, Brahminism, Buddhism, and the religions of China; but Christianity is spreading everywhere. There is no land where its voice is not heard. And, best of all, its spirit is quietly permeating lands and influencing lives even where its teachings are not accepted as a religion; and many who do not openly enlist under the banner of Christ are in deed faithful unawares.



GOODBYE TO THE

My Little Travellers

TRAVELLERS through the world are we all, and you and I have been companions once again in this journey through the realms of knowledge.

INTO the homes of millions of people this Book of my Heart has gone since it began with a little child so long ago, and from a great multitude all over the Earth has come back to me the love that is more precious than gold. For it has been read by millions throughout our Empire and the United States of America. It has been translated into many languages and so has delighted children who speak French and Italian, Portuguese and Spanish, and even Chinese. Now we come to the last page of all. It is the time to say Goodbye to this old friend, and turn to something new.

YET with a book as with a friend, it is surely not the sadness of farewell, for the spirit of a book grows into our lives and will not die. So it is that this book goes on. It has been made out of the hearts of men and women, and it grows



BOOK OF MY HEART

into the hearts and lives of a great multitude. It carries through the world those things that do not die, those things without which life would not be worth while.

IT will go on in your own life, as long as you see with these eyes and feel with these hands; and when these eyes no longer see, and these hands no longer feel, all that this book has meant to you will go on working in the lives of those who remember you. And after them, for ages after them, whatever is good in this book will live.

SHALL we let its last word breathe the spirit that I like to feel is in it everywhere, the spirit of goodwill to all mankind, and the faith that, whatever may betide us, nothing ill can happen to those who put their trust in God? He is our Refuge and our Strength, and underneath us are His Everlasting Arms.

AND so, little travellers, Goodbye, and God be with us till our journey's end.

Arthur Mee

Children's Encyclopedia

GUIDE TO KNOWLEDGE

including

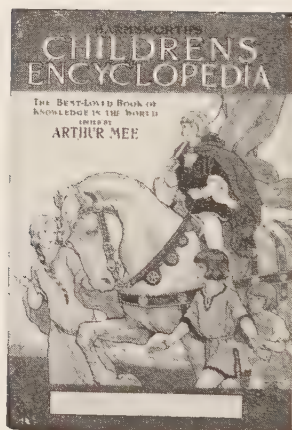
Reference Tables

Atlas of the World

Index to this Book

so forming a quick guide to

LIVES OF FAMOUS PEOPLE
SCIENTIFIC AND GEOGRAPHICAL FACTS
A THOUSAND POEMS AND RHYMES
STORIES OF ALL AGES AND RACES
ABOUT TWENTY THOUSAND PICTURES



WORLD FACTS AND FIGURES IN TABLE FORM

AREA OF EARTH'S SURFACE

	Square miles
Asia	17,000,000
Africa	11,500,000
Europe	3,750,000
North America	8,000,000
South America	6,800,000
Oceania	4,255,000
Antarctica	6,205,000
Total Land Area	57,510,000
Total Ocean Area	139,440,000
Total Area of Earth's surface	196,950,000

AVERAGE HEIGHTS OF THE CONTINENTS

	Feet		Feet
Asia .. 3189		N. America .. 1888	
Africa .. 2021		S. America .. 2078	
Europe .. 939		Australia .. 805	
Average height of all the Earth's land surface 2800 feet.			

APPROXIMATE AREAS AND GREATEST KNOWN DEPTHS OF THE OCEANS

Ocean	Square miles	Depth in feet
Pacific	68,634,000	35,400
Atlantic	41,322,000	30,246
Indian	28,350,000	22,968
Antarctic	7,500,000	14,274
Arctic	5,440,000	17,850

AVERAGE DEPTHS OF THE OCEANS

	Feet		Feet
Pacific .. 14,050		Indian .. 13,000	
Atlantic .. 12,880		Arctic .. 4000	

AREAS OF BIGGEST SEAS

	Square Miles
Mediterranean	1,145,000
Behring	878,000
Caribbean	750,000
Okhotsk	580,000
East China	482,000
Yellow	480,000
Hudson Bay	472,000
Japan	405,000
Andaman	300,000
North	200,000
Red	178,000
Caspian	168,890
Black	164,000
Baltic	160,000

THIRTY LONGEST RIVERS

River	Flowing into	Miles
Nile ..	Mediterranean ..	4160
Amazon ..	Atlantic ..	3900
Yangtse ..	East China Sea ..	3100
Congo ..	Atlantic ..	2720
Amur ..	Tartary Strait ..	2700
Hwangho ..	Yellow Sea ..	2700
Lena ..	Laptev Sea ..	2650
Niger ..	Gulf of Guinea ..	2600
Mekong ..	South China Sea ..	2500
Ob ..	Gulf of Ob ..	2500
Mississippi ..	Gulf of Mexico ..	2470
Paraná ..	Rio de la Plata ..	2432
Missouri ..	Mississippi River ..	2350
Yenisei ..	Kara Sea ..	2310
Murray ..	Lake Alexandria ..	2290
Volga ..	Caspian Sea ..	2200
Madeira ..	Amazon River ..	2000
St. Lawrence ..	Gulf of St. Lawrence ..	1950
Irtysch ..	Ob River ..	1850
Purus ..	Amazon River ..	1850
Yukon ..	Behring Sea ..	1800
Rio Grande ..	Gulf of Mexico ..	1800
Sao Francisco ..	Atlantic ..	1800
Syr Darya ..	Aral Sea ..	1770
Salween ..	Gulf of Martaban ..	1750
Danube ..	Black Sea ..	1725
Euphrates ..	Persian Gulf ..	1700
Indus ..	Arabian Sea ..	1700
Orinoco ..	Atlantic ..	1700
Tocantins ..	Para River ..	1700

AREAS OF RIVER BASINS

River	Location	Square Miles
Amazon ..	S. America ..	2,772,000
Congo ..	Africa ..	1,425,000
Nile ..	Africa ..	1,293,000
Mississippi ..	N. America ..	1,290,000
La Plata ..	S. America ..	1,198,000
Ob ..	Asia ..	1,125,000
Yenisei ..	Asia ..	980,000
Lena ..	Asia ..	895,000
Amur ..	Asia ..	770,000
Yangtse ..	Asia ..	689,000
Mackenzie ..	N. America ..	682,000
Volga ..	Asia ..	592,000
Niger ..	Africa ..	580,000
St. Lawrence ..	N. America ..	565,200
Zambesi ..	Africa ..	513,000
Orinoco ..	S. America ..	430,000
Orange ..	Africa ..	400,000
Hwangho ..	Asia ..	370,000
Yukon ..	N. America ..	330,000
Danube ..	Europe ..	320,300
Colorado ..	N. America ..	250,000
Rio Grande ..	N. America ..	232,300

HEIGHTS OF FAMOUS WATERFALLS

	Feet
Tugela, Natal	2810
Kukenaam, British Guiana	2000
Sutherland, New Zealand	1904
Ribbon, California	1612
King George VI, British Guiana	1600
Upper Yosemite, California	1430
Gavarine, France	1385
Takkakaw, British Columbia	1200
Wollomombie, Australia	1100
Staubach, Switzerland	980
Trummelbach, Switzerland	950
Chiroombo, Northern Rhodesia	880
Vettis, Norway	850
Multnomah, Oregon	850
King Edward VIII, British Guiana	840
Gersoppa, India	830
Kaiteur, British Guiana	741
Kalambo, Tanganyika	705
Maradals, Norway	650
Skykje, Norway	650
Maletsunyane, Basutoland	630
Bridalveil, California	620
Nevada, California	594
Wentworth, New South Wales	578
Bowen, New Zealand	540
Voring, Norway	529
Skaeggedals, Norway	525
Marina, British Guiana	500
Victoria, Rhodesia	354
Niagara, Canada	175

THIRTY HIGHEST MOUNTAINS

	Feet
Everest, Himalayas	29,002
Godwin-Austen, K 2, Himalayas	28,250
Kanchanganga, Himalayas	28,146
Makalu, Himalayas	27,790
Dhaulagiri, Himalayas	26,810
Nanga-Parbat, Himalayas	26,660
Annapurna I, Himalayas	26,492
Gasherbrum, Himalayas	26,470
Gosainthan, Himalayas	26,291
Nanda Devi, Himalayas	25,645
Rakaposhi, Himalayas	25,550
Namcha Barwa, Himalayas	25,455
Kamet, Himalayas	25,447
Gurlu Mandhata, Himalayas	25,355
Ulug Mustagh, Kwenlun	25,340
Tirich Mir, Hindu Kush	25,263
Kungur, Pamirs	25,146
Minya Konka, Szechwan	24,900
Teram Kangri I, Himalayas	24,489
Jonsong, Himalayas	24,416
Mustagh Ata, Pamirs	24,388
West Ibi Gamin, Himalayas	24,200
Chomo Lhari, Himalayas	23,930
Tengri Khan, Tianshan	23,620
Gauri Sankar, Himalayas	23,440
Api, Himalayas	23,399
Kaufmann, Trans Alai	23,383
Trisul, Himalayas	23,360
Aconcagua, Andes	22,835
Huascaran, Andes	22,211

World's Biggest Islands

	Square Miles
Australia	2,974,581
Greenland	827,300
New Guinea	316,861
Borneo	290,012
Madagascar	228,642
Baffin (Canada)	197,754
Sumatra	167,620
Honshu (Japan)	89,009
Great Britain	84,186
Victoria (Canada)	80,340
Ellesmere (Canada)	77,392
Celebes	65,663
South Island (New Zealand)	58,092
Java	48,534
North Island (New Zealand)	44,281
Newfoundland	42,734
Cuba	41,634
Luzon (Philippines)	40,420
Iceland	39,698
Mindanao	36,537

BIGGEST SHIP CANALS

The first column of figures gives the length in miles, the second column gives the width of the canal at the bottom in feet, the third the depth in feet, and the fourth the cost.

Göta .. 115	47 10	£770,000
Suez .. 104½	197 34	£29,725,000
Kiel .. 61	150 45	£19,000,000
Panama .. 50½	300 45	£75,000,000
Elbe & Trave .. 41	72 10	£1,170,000
Manchester .. 35½	120 29	£15,500,000
Welland .. 26½	200 25	£21,000,000
Princess Juliana .. 20	52 16	£3,700,000
Amsterdam .. 16½	88 23	£2,600,000
Corinth .. 4	72 26	£1,000,000
Saulte Ste. Marie, U.S.A. .. 1½	100 22	£2,000,000
Saulte Ste. Marie (Canada) .. 1	142 20	£560,000

THE BIGGEST LAKES

	Square Miles
Superior .. N. America ..	31,820
Victoria .. Africa ..	26,640
Huron .. N. America ..	23,010
Michigan .. N. America ..	22,400
Tanganyika .. Africa ..	12,700
Baikal .. Asia ..	12,150
Great Bear .. N. America ..	12,000
Great Slave .. N. America ..	11,170
Nyasa .. Africa ..	11,000
Erie .. N. America ..	9,940
Winnipeg .. N. America ..	9,398
Ontario .. N. America ..	7,540
Ladoga .. Europe ..	7,100
Balkhash .. Asia ..	6,670
Chad .. Africa ..	6,300
Onega .. Europe ..	3,820
Eyre .. Australia ..	3,700
Rudolf .. Africa ..	3,475
Titicaca .. S. America ..	3,200
Nicaragua .. N. America ..	3,089

There are besides these the two great inland seas, the Caspian (168,890 square miles) between Europe and Asia, and the Aral (24,600 square miles) in Asia. In South America there is also Lake Maracaibo (6,300 square miles), classed among the lakes although it is not enclosed by land.

POPULATIONS OF THE WORLD

	Rough Estimates
Asia	1,178,341,000
Europe	380,960,000
U.S.S.R.	211,385,000
North America	192,657,000
Africa	175,869,000
South America	101,400,000
Australasia and Oceania	23,797,000
Total	2,264,409,000

CHILDREN'S ENCYCLOPEDIA

AREAS AND POPULATIONS OF COUNTRIES (Approximate)

Country	Square Miles	Population
Abyssinia ..	350,000 ..	5,500,000
Afghanistan ..	250,000 ..	12,000,000
Alaska ..	586,400 ..	92,000
Albania ..	10,629 ..	100,000
Andorra ..	191 ..	5200
Arabia ..	1,000,000 ..	10,000,000
Argentina ..	1,079,965 ..	16,107,900
Australia ..	2,974,581 ..	7,581,000
Austria ..	32,369 ..	6,935,000
Belgium ..	11,752 ..	8,388,500
Belgian Congo ..	900,000 ..	10,425,200
Bolivia ..	412,000 ..	3,854,000
Brazil ..	3,275,510 ..	47,550,000
Br. Commonwealth ..	13,000,000 ..	551,336,800
Bulgaria ..	42,796 ..	7,048,000
Burma ..	261,610 ..	16,000,000
Canada ..	3,690,410 ..	12,883,000
Ceylon ..	25,332 ..	6,879,000
Chile ..	286,322 ..	5,479,200
China ..	3,000,000 ..	463,000,000
Colombia ..	439,830 ..	10,545,000
Costa Rica ..	23,000 ..	771,500
Cuba ..	44,206 ..	5,130,000
Czechoslovakia ..	49,355 ..	12,170,000
Denmark ..	16,576 ..	4,146,000
Dominican Republic ..	19,332 ..	2,250,000
Ecuador ..	276,000 ..	3,250,000
Egypt ..	386,000 ..	19,090,000
England ..	50,337 ..	36,695,000
Finland ..	134,588 ..	3,906,000
France ..	212,659 ..	41,500,000
French Colonies ..	5,000,000 ..	71,402,800
Germany ..	143,200 ..	67,032,200
Greece ..	50,257 ..	7,450,000
Guatemala ..	45,452 ..	3,678,000
Haiti ..	10,200 ..	3,000,000
Holland ..	12,883 ..	9,636,000
Honduras ..	44,411 ..	1,240,000
Hungary ..	35,875 ..	3,333,000
Iceland ..	39,709 ..	130,000
India ..	1,200,000 ..	300,000,000
Indonesia ..	218,365 ..	55,710,000
Iraq ..	116,000 ..	4,794,400
Ireland (Republic) ..	27,137 ..	3,000,000
Ireland (Northern) ..	5238 ..	1,348,000
Italy ..	119,800 ..	45,943,000
Japan ..	147,690 ..	79,340,000
Korea ..	85,000 ..	24,000,000
Liberia ..	43,000 ..	1,600,000
Lebanon ..	36,000 ..	1,160,000
Liechtenstein ..	62 ..	12,200
Luxemburg ..	999 ..	289,000
Manchuria ..	400,000 ..	40,000,000
Mexico ..	763,944 ..	23,425,000
Mongolia (Outer) ..	622,744 ..	850,000
Morocco ..	172,104 ..	9,082,900
Nepal ..	54,000 ..	5,600,000
Netherlands East Indies ..	735,168 ..	72,000,000
New Zealand ..	103,415 ..	1,800,000
Nicaragua ..	57,145 ..	1,136,000
Norway ..	124,556 ..	3,145,000
Pakistan ..	300,000 ..	70,000,000

Country	Square Miles	Population
Panama ..	28,576 ..	641,000
Paraguay ..	157,006 ..	1,250,000
Persia ..	628,060 ..	13,000,000
Peru ..	482,258 ..	7,038,800
Philippines ..	114,830 ..	19,511,000
Poland ..	121,000 ..	23,930,000
Portugal ..	35,500 ..	8,312,000
Portuguese Colonies ..	803,835 ..	10,875,000
Rumania ..	91,346 ..	15,873,000
Salvador ..	13,173 ..	2,047,000
San Marino ..	38 ..	12,100
Scotland ..	30,410 ..	5,140,000
Siam ..	209,148 ..	16,000,000
S. Africa ..	790,275 ..	11,733,400
S. Rhodesia ..	150,333 ..	1,764,000
Spain ..	196,607 ..	27,503,000
Sweden ..	173,403 ..	6,803,000
Switzerland ..	15,737 ..	4,250,000
Syria ..	54,300 ..	3,006,000
Tibet ..	475,000 ..	3,000,000
Transjordan ..	34,750 ..	350,000
Turkey ..	296,107 ..	19,000,000
U.S.S.R. ..	8,500,000 ..	200,000,000
United Kingdom ..	94,279 ..	48,016,000
United States ..	2,977,128 ..	145,340,000
Uruguay ..	72,153 ..	2,300,000
Venezuela ..	352,143 ..	4,398,000
Wales ..	8006 ..	2,416,000
Yugoslavia ..	96,000 ..	16,000,000

CHIEF LANGUAGES OF THE PEOPLES

Language	Population
Chinese ..	488,573,000
English ..	270,000,000
Russian ..	166,000,000
Spanish ..	102,700,000
Japanese ..	97,700,000
German ..	78,947,000
Western Hindi ..	72,000,000
French ..	68,895,000
Bengali ..	51,000,000
Portuguese ..	48,800,000
Italian ..	43,700,000
Javanese ..	42,000,000

VOLCANOES

Volcano	Feet
Llullailaco, Chile ..	22,014
Cotopaxi, Ecuador ..	19,600
Mount Wrangell, Alaska ..	14,005
Mauna Loa, Hawaii ..	13,675
Semerou, Java ..	12,050
Iliamna, Aleutian Islands ..	11,000
Etna, Sicily ..	10,800
Chillan, Chile ..	10,500
Haleakala, Hawaii ..	10,032
Tongariro, New Zealand ..	7000
Hecla, Iceland ..	5100
Vesuvius, Italy ..	3700

Now Believed Extinct

Volcano	Feet
Aconcagua, Argentina ..	22,835
Chimborazo, Ecuador ..	20,577
Kilimanjaro, Tanganyika ..	19,387
Anisana, Ecuador ..	19,100
Elbrus, Persia ..	18,481
Popocatepetl, Mexico ..	17,887
Orizaba, Mexico ..	17,400
Fujiyama, Japan ..	12,395

THE WORLD'S BIGGEST SHIPS

Ship	Length	Breadth	Tonnage
Queen Elizabeth ..	987 feet	118 feet	83,673
Queen Mary ..	975 "	118 "	81,235
Liberte ..	890 "	102 "	49,746
Conte di Savoia ..	815 "	96 "	48,502
Aquitania ..	869 "	97 "	44,786
Ile de France ..	763 "	92 "	43,450
Nieuw Amsterdam ..	714 "	88 "	36,667
Mauretania ..	739 "	89 "	35,677
Caronia ..	670 "	91 "	34,000
Orcaades ..	680 "	91 "	30,000
Pasteur ..	671 "	88 "	29,253
Pretoria Castle ..	717 "	84 "	28,500
Edinburgh Castle ..	717 "	84 "	28,500
Georgic ..	683 "	82 "	27,268

RAILWAYS OF THE WORLD

The figures show the approximate length of railway track in each land.

Country	Length of Railway Track (Miles)
Algeria ..	2790
Argentina ..	26,710
Australia ..	27,220
Austria ..	4450
Belgian Congo ..	2920
Belgium ..	3210
Bolivia ..	1610
Brazil ..	21,260
Bulgaria ..	2000
Burma ..	1450
Canada ..	42,340
Ceylon ..	920
Chile ..	5730
China ..	9290
Colombia ..	2110
Cuba ..	2990
Czechoslovakia ..	8390
Denmark ..	3040
Ecuador ..	690
Egypt ..	3440
Finland ..	2960
France ..	26,430
Germany ..	42,300
Great Britain ..	19,870
Greece ..	1630
Guatemala ..	720
Holland ..	2120
Honduras ..	650
Hungary ..	5420
India and Pakistan ..	40,510
Iraq ..	1180
Ireland (Republic) ..	2470
Ireland (Northern) ..	760
Italy ..	14,520
Japan ..	15,260
Kenya and Uganda ..	1630
Korea ..	4160
Malaya ..	1070
Manchuria ..	7380
Mexico ..	15,050
Morocco ..	1080
New Zealand ..	3530
Nigeria ..	2210
Norway ..	2490
Paraguay ..	750
Peru ..	2760
Poland ..	13,380
Portugal ..	2110
Rumania ..	7370
Siam ..	2040
South Africa ..	13,940
Southern Rhodesia ..	1370
Spain ..	10,570
Sudan ..	2020
Sweden ..	10,520
Switzerland ..	3350
Syria and Lebanon ..	1300
Tanganyika ..	4890
Tunis ..	1280
Turkey ..	4890
U.S.S.R. ..	66,000
United States ..	227,250
Uruguay ..	1910
Venezuela ..	700
Yugoslavia ..	6930

THE TALLEST BUILDINGS

Building	Feet
Palace of the Soviets, Moscow ..	1365
Empire State Building, N.Y. ..	1250
Chrysler Building, New York ..	1046
Eiffel Tower, Paris ..	985
60 Wall Tower, New York ..	950
Bank of Manhattan, New York ..	927
R.C.A. Building, New York ..	850
Woolworth Building, New York ..	792

The height given for the Palace of the Soviets includes a 328-foot statue of Lenin.

New York has 36 buildings more than 500 feet high. Chicago has 12, the highest being the Board of Trade building, which is 612 feet high.

In addition to the Palace of the Soviets and the Eiffel Tower there are only two buildings over 500 feet in Europe. These are Ulm Cathedral spire, 529 feet, and Cologne Cathedral, 524 feet. In England there are Blackpool Tower, 500 feet, and Salisbury Cathedral, 404 feet high.

ASTRONOMY TABLES—PLANETS AND STARS

HEAT AND LIGHT RECEIVED BY THE PLANETS

Reckoning the heat and light received by the Earth from the Sun as 1000, the amounts received by the planets are as follows :

Mercury	6800	Jupiter	.. 40
Venus ..	1900	Saturn ..	10
Earth ..	1000	Uranus ..	3
Mars ..	440	Neptune ..	1

DISTANCES OF PLANETS FROM EARTH

		Greatest Distance in miles	
Mercury	.. ..	137,910,000	
Venus ..	.. ..	162,229,000	
Mars ..	.. ..	249,384,000	
Jupiter ..	.. ..	601,540,000	
Saturn ..	.. ..	1,030,912,000	
Uranus ..	.. ..	1,960,583,000	
Neptune..	.. ..	2,913,644,000	

		Least Distance in miles	
Mercury	.. ..	48,020,000	
Venus ..	.. ..	23,701,000	
Mars ..	.. ..	33,916,000	
Jupiter ..	.. ..	365,816,000	
Saturn ..	.. ..	742,646,000	
Uranus ..	.. ..	1,606,183,000	
Neptune..	.. ..	2,674,357,000	

RELATIVE GRAVITATION ON THE SURFACES OF SUN AND PLANETS

The pull of gravitation on the surface of other planets varies very much from the pull of the Earth, and reckoning the Earth's gravitation as 100 the relative pull on the Sun and other planets is :

Sun ..	2770	Mars ..	38
Mercury	38	Jupiter ..	.261
Venus ..	86	Saturn ..	.119
Earth ..	100	Uranus ..	.88
Neptune ..	110		

SUN STATISTICS

Mean distance of Sun from the Earth, 92,965,000 miles
Greatest distance of Sun from the Earth, 94,524,000 miles
Least distance of Sun from the Earth, 91,406,000 miles
Diameter, 867,000 miles
Mass, reckoning the Earth as 1, 333,000
Density, reckoning the Earth as 1, .25
Volume, reckoning the Earth as 1, 1,305,000
Force of gravity at the surface, reckoning the Earth as 1, 27.7
Period of rotation on its axis 25 days, 7 hours, 48 minutes
Speed of rotation at its equator, 4407 miles an hour
Surface in square miles 2,283,621,466,000
Surface area equals 12,000 times that of the Earth
Volume, 339,300,000,000,000,000 cubic miles
Total attraction between Earth and Sun equals the pull of 3,600,000,000,000 tons
Energy radiated from each square foot of surface equals 15,000 horse-power
Temperature about 10,000 degrees Fahrenheit
Mass of the Sun in tons 1,998,000,000,000,000,000,000,000
Candle power 1,575,000,000,000,000,000,000
Height some flames rise from the surface, 286,000 miles

STATISTICS OF THE EARTH

Polar diameter, 7899.6 miles
Equatorial diameter, 7926.6 miles
Circumference at the Equator, 24,899 miles
Area of the surface, 196,950,000 square miles
Volume, 260,000,000,000 cubic miles
Mass (weight) 6,000,000,000,000,000,000,000 tons
Earth's orbit, 580,000,000 miles
Speed travelling round the Sun, 66,000 miles an hour
Amount of the Sun's energy received, one two-thousand-millionth
Weight of the atmosphere, estimated, 11,600,000,000,000,000,000 pounds
Area of the sea, 139,440,000 square miles
Area of the land, 57,510,000 square miles

DISTANCE IN MILES OF THE PLANETS FROM THE SUN

	Mean Distance
Mercury ..	35,987,000
Venus ..	67,245,000
Earth ..	92,965,000
Mars ..	141,650,000
Jupiter ..	483,678,000
Saturn ..	886,779,900
Uranus ..	1,783,000,000
Neptune ..	2,790,000,000
Pluto ..	3,500,000,000

	Greatest Distance	Least Distance
Mercury	43,386,000	28,588,000
Venus	67,705,000	66,787,000
Earth	94,524,000	91,406,000
Mars	154,860,000	128,440,000
Jupiter	507,016,000	460,340,000
Saturn	936,388,000	837,170,000
Uranus	1,866,059,000	1,700,707,000
Neptune	2,819,120,000	2,768,881,000

YEARS OF THE PLANETS

The period of revolution round the Sun of the planets varies enormously, and is given here, this period being the length of the planet's year in each case.

	Days	Hours	Minutes
Mercury	87	23	15
Venus ..	224	16	48
Earth ..	365	6	9
Mars ..	686	23	31
Jupiter ..	4332	14	2
Saturn ..	10,759	5	16
Uranus ..	30,688	7	12
Neptune..	60,180	20	38
Pluto ..	about 260	years	

TWENTY BRIGHTEST STARS

The twenty brightest stars in the heavens are known as First Magnitude Stars, and are as follow :

Star	Constellation
Sirius ..	Canis Major or the Great Dog
Canopus ..	Argo or the Ship Argo
Alpha Centauri	Centaurus or the Centaur
Arcturus ..	Boötes
Rigel ..	Orion
Capella ..	Auriga or the Wagoner
Vega ..	Lyra or the Lyre
Procyon ..	Canis Minor or the Little Dog
Betelgeuse ..	Orion
Achernar ..	Eridanus or the River Eridanus
Aldebaran ..	Taurus or the Bull
Beta Centauri	Centaurus or the Centaur
Alpha Crucis ..	Crux or the Southern Cross
Antares ..	Scorpio or the Scorpion
Altair ..	Aquila or the Eagle
Spica ..	Virgo or the Virgin
Fomalhaut ..	Piscis Australis or the Southern Fish
Pollux ..	Gemini or the Twins
Regulus ..	Leo or the Lion
Deneb ..	Cygnus or the Swan

BRIGHTNESS OF THE STARS

It is estimated that the other stars are brighter than one of the sixth magnitude by the number of times shown here :

A star of the :	
Fifth magnitude ..	2 times
Fourth magnitude ..	6 times
Third magnitude ..	12 times
Second magnitude ..	25 times
First magnitude ..	100 times
Sirius, the brightest star	400 times
The Sun, our nearest star,	2,400,000,000,000 times

VOLUME, MASS, DENSITY, AND AREAS OF THE PLANETS

This table shows the relative volumes, or bulk, the mass, or weight, the density, or compactness, and the surface, or area, of the various planets, reckoning the Earth as 100 in each case.

	Volume	Mass	Density	Surface
Mercury	5.6	4.7	85	14
Venus	92	82	89	93
Earth	100	100	100	100
Mars	15	10.8	71	28
Jupiter	130,900	31,770	24	11,690
Saturn	76,000	9480	13	8330
Uranus	6500	1460	22	1590
Neptune	8500	1700	20	1890

RELATIVE SIZES OF THE ORBITS OF THE PLANETS

If the orbit of Mercury round the Sun is represented by a circle one inch in diameter, the relative sizes of the diameters of the orbits of the planets are as follow :

Orbit of	Inches	Orbit of	Inches
Mercury ..	1	Jupiter ..	13.4
Venus ..	1.9	Saturn ..	24.6
The Earth ..	2.6	Uranus ..	49.5
Mars ..	3.9	Neptune ..	77.5

DIAMETERS OF THE SUN AND MOON AND PLANETS

	miles		miles
Sun ..	866,500	Mars ..	4352
Moon ..	2163	Jupiter ..	90,190
Mercury	2765	Saturn ..	76,470
Venus ..	7826	Uranus ..	34,900
Earth ..	7918	Neptune	32,900
Pluto ..	4000		

FACTS AND FIGURES ABOUT THE MOON

Diameter, 2163 miles
Circumference, 6795 miles
Surface area, 14,660,000 square miles
Volume, 5,300,000,000 cubic miles
Mass, 78,000,000,000,000,000 tons
Mean Distance from Earth, 238,000 miles
Greatest Distance from Earth, 252,970 miles
Least Distance from Earth, 221,600 miles
Circumference of Moon's Orbit, 1,500,680 miles
Speed in its orbit, 2288 miles per hour, or 3357 feet per second
Full Moon's light is one-618,000th of sunlight
Amount of sunlight reflected, 17 per cent
Estimated day temperature, 200° Fahrenheit
Estimated night temperature, minus 200° Fahrenheit
Diameter of Ptolemy, the biggest crater, 115 miles
Depth of deepest crater, Theophilus, 19,000 feet
Height of tallest mountain, Leibnitz, 24,970 feet
Time of one revolution round Earth 27 days 7 hours 43 minutes 11 seconds
Force of gravity at Moon's surface is four-twenty-fifths that of the Earth
Weight of a terrestrial pound on the Moon, 2½ ounces.

FOUR HUNDRED INVENTIONS & DISCOVERIES

- Here we give a list of over 400 important inventions and discoveries in the history of the world, with names, nationality, and dates
- Aberration of Light, James Bradley (British) 1727
- Accordion, Damian (Austrian) 1829
- Acetylene, Edmund Davy (British) 1836
- Acrostic, Porphyrius Optatianus (Roman) 4th century
- Actinometer, Sir John Herschel (British) 1825
- Aerated Waters, first made in Europe about 1767
- Aerograph, or Air-brush, C. L. Burdick (British) 1893
- Aeroplane. A development from a successful glider by Sir George Cayley (British) in 1809 to the first successful man-carrying, power-driven aeroplane by the brothers Wilbur and Orville Wright (American) 1903
- Aga Light (or Dalen Light) for gaslight buoys, Gustaf Dalén (Swedish) about 1907
- Air-gun, Rinault or Marin (French) 1656
- Air-pump, Otto von Guericke (German) 1654
- Algebra, Drophantus of Alexandria, 4th century
- Alum, at Roccha in Syria, about 1300
- Aluminium, Frederick Wöhler (German) 1827
- Ambrine, Barthe de Sandfort (French) 1904
- American Organ, invented by a French workman in Paris, 1835
- Anchors, by the Tuscans before 600 B.C.
- Aniline, Unverdorben (German) 1826
- Aniline Dye, Sir William Perkin (British) 1856
- Antipyrine, Knorr (German) 1883
- Aquaint, Abbé St. Non (French) in early 18th century, perfected by Jean Baptiste Le Prince (French) 1750
- Archeopteryx, Herman von Meyer and Dr. Hüberlein (German) 1861
- Archimedean Screw, Archimedes of Syracuse, about 236 B.C.
- Argand Lamp, Aimé Argand (Swiss) about 1782
- Argon, Lord Rayleigh and Professor Ramsay (British) 1893
- Artesian Well, first sunk in Europe at Artois, in France, in 1126, but previously known in China and Egypt
- Artificial Silk, Sir Joseph Swan (British) 1883
- Astraea, minor planet, Hencke (German), 1845
- Atmosphere, composition of, Joseph Priestley (British) 1774
- Atmospheric Pressure, 15 pounds to square inch, Galileo (Italian) 1564
- Atomic Theory, J. Dalton (British) 1808
- Atwood's Machine, George Atwood (British) 1784
- Audiometer, D. E. Hughes (British) 1879
- Audiphone, R. G. Rhodes (American) 1880
- Autogyro, Senor de la Cierva (Spanish) 1920
- Avogadro's Law, Count Amedeo Avogadro (Italian) about 1837
- Bacteria, Antonius von Leeuwenhoek (Dutch) 1680
- Baily's Beads, Francis Baily (British) 1836
- Balloon, Joseph Montgolfier (French) 1782. Previously Joseph Black (British) had made a small balloon in a room, 1767
- Barium, Sir Humphry Davy (British) 1808
- Barker's Mill, Dr. Robert Barker (British) 18th century
- Barometer, Torricelli (Italian) about 1643
- Barrage in War, first used by British in Battle of the Somme, 1916
- Bassoon, Afranio (Italian) 16th century
- Battering-ram, Artemon (Lacedæmonian) about 441 B.C.
- Bayonet, at Bayonne, France, about 1647
- Beet Sugar : see Sugar
- Bellows reputed to have been invented by Anacharsis (Scythian) about 569 B.C.
- Benzene, or Benzol, Michael Faraday (British) 1825
- Bessemer Steel, Sir Henry Bessemer (British) 1855
- Bicycle, Safety, J. Kemp Starley (British) 1880
- Billiards, Henrique Devigne (French) about 1571
- Bismuth, Basil Valentine (German) 1450
- Blasting Gelatine, Alfred Nobel (Swedish) 1875
- Bleaching with Chlorine, Claude Berthollet (French) about 1785
- Blood Corpuscles, Red, Antonius von Leeuwenhoek (Dutch) about 1700
- Bobbinet Machine, John Heathcoat (British) 1809
- Bode's Law, named after Johann E. Bode (German), but first announced by Johann Titius (German) 1772
- Bombs, at Venlo in the Netherlands, 1495
- Bone Oil, Johann K. Dippel (German) 17th century
- Boracic, or Boric, Acid, Wilhelm Homberg (German) 1702
- Boulle Work, Charles Boulle (French) about 1672
- Boyle's Law, Robert Boyle (British) 1662
- Braille System for the Blind, Louis Braille (French) 1834
- Bramah Hydraulic Press, Joseph Bramah (British) 1795
- Bromine, Antoine Balard (French) 1826
- Brontometer, George J. Symons (British) 1890
- Buhl Work : see Boulle
- Bunsen Burner, Robert Bunsen (German) about 1852
- Cadmium, F. Stromeyer (German) 1817
- Calcium, Sir Humphry Davy (British) 1808
- Calculating Machine, Blaise Pascal (French) about 1650
- Camera Obscura, attributed to Roger Bacon (British) 1297
- Cannon, Berthold Schwarz (German) early 14th century
- Cannon, Modern Breech-loading, Sir W. Armstrong (British) 1859
- Capstan, reputed inventor Sir Samuel Morland (British) about 1690
- Carbide of Calcium, first made by F. Wöhler (German) 1862 ; first cheap commercial process of manufacture T. L. Willson (American) and H. Moissan (French) 1892
- Carbolic Acid, Runga (German) 1834
- Carbon Bisulphide, Wilhelm Lampadius (German) 1796
- Carbon Dioxide (Carbonic Acid Gas), Joseph Black (British) 1755
- Catapult, for sieges, Dionysius, the tyrant of Syracuse, 399 B.C.
- Cathode Rays, Julius Plucker (German) about 1847
- Cell Theory of Life, Theodor Schwann (German) 1839
- Cellular Structure of Plants, Robert Hooke (British) 1665
- Celluloid, Alexander Parkes and Daniel Spill (British) before 1870 ; perfected by John Hyatt (American) 1872
- Cement (Roman), Parker (British) 1796
- Cephalic Index, Anders Retzius (Swedish) about 1842
- Ceres, the first asteroid, or minor planet, Giuseppe Piazzi (Italian) 1801
- Chain Shot, invented in Europe about 1665
- Chanting, St. Ambrose (Gallic) about 386
- Chassepot Rifle, Antoine Chassepot (French) 1870
- Chlorine, Karl Scheele (Swedish) 1774
- Chloroform, simultaneously by Eugène Soubeiran (French) and Baron Liebig (German) 1831. First used as an anaesthetic by Sir James Simpson (British) 1848
- Chromium, Vauquelin (French) 1798
- Chronometer, John Harrison (British) 1761
- Cigarette, invented in France about 1799
- Cinema, a gradual development. Zoetrope, or wheel of life, described by W. G. Horner (British) about 1833 ; first instantaneous photographs of motion, Edward Muybridge (British) 1872 ; first satisfactory film, George Eastman (American) 1885 ; first moving picture camera, William Friese-Greene (British) 1889 ; first satisfactory moving picture projector, Robert W. Paul (British) 1895
- Circulation of the Blood, William Harvey (British) about 1628
- Clocks, invented by the French in the 13th century
- Coal Tar Dyes, Sir William Perkin (British) 1856
- Coal Tar Perfumes, Sir William Perkin (British) 1868
- Cobalt, George Brandt (Swedish) 1733
- Coins, said to have been invented by the Lydians before 860 B.C.
- Cold Storage for Meats, Francis Bacon (British) 1626
- Collodion, Christian Schönbein (German) 1845
- Comet, first photographic discovery of, Edward E. Barnard (American) 1892
- Concertina, Sir Charles Wheatstone (British) about 1825
- Copying Machine for Letters, James Watt (British) 1778
- Cordite, Sir F. A. Abel and Sir James Dewar (British) 1889
- Cotton Saw Gin, Eli Whitney (American) 1793
- Creosote, Baron Karl von Reichenbach (German) about 1833
- Crookes's Tube, Sir William Crookes (British) 1879
- Dalen Light (or Aga Light), Gustaf Dalén (Swedish) about 1907
- Daylight Saving, William Willett (British) 1908

WITH NAMES, NATIONALITY, AND DATES

- Diesel Engine, Rudolf Diesel (German) 1893 to 1897
- Dissolving Views, Henry L. Childe (British) 1874
- Diving Dress, Augustus Siebe (German) 1829
- Drilling Machine in Agriculture, Jethro Tull (British) early 18th century
- Drum Capstan for Anchors, Sir Samuel Morland (British) about 1690
- Dualin, Explosive, Carl Ditmar (German) 1870
- Duplex Telegraphy, two messages along one wire at same time, Dr. Gintl (Austrian) 1853
- Dynamite, Alfred Nobel (Swedish) 1867
- Dynamo, Michael Faraday (British) 1831
- Electric Clock, Sir Charles Wheatstone (British) and Alexander Bain (British) 1840
- Electric Condenser, Alessandro Volta (Italian) 1782
- Electric Furnace, Robert Hare (American) 1781, but first made a commercial success by Sir William Siemens (German) 1880
- Electric Light (carbon), Sir Humphry Davy (British) 1800
- Electric Light (incandescent), J. W. Swan (British) 1880
- Electric Lighthouse, Michael Faraday (British) 1859
- Electric Machine, first, Otto von Guericke (German) 1647
- Electric Motor, Moritz Jacobi (German) 1834
- Electric Welding, Professor Elihu Thomson (American) 1887
- Electro-magnetism, Hans Oersted (Danish) 1802
- Electron, Von Helmholtz (German) 1881
- Electrophorus, Volta (Italian) 1775
- Electro-plating, Thomas Spencer (British) 1837
- Encke's Comet, Jean Louis Pons (French) 1818
- Epsom Salts, Nehemiah Grew (British) 1695
- Eros, minor planet, Herr Witt (German) 1898
- Esperanto, Dr. Zamenhof (Polish) 1887
- Etching, Francis Mazzuoli, also called Parmigiano (Italian) about 1532
- Ethane, Sir Edward Frankland (British) and Adolf Kolbe (German) 1848
- Ether, of space, Johann Encke (German) 1829
- Ether, a chemical, Valerius Cordus (German) 1540
- Finsen Light, Niels Finsen (Danish) about 1900
- Fire-arms, Berthold Schwarz (German) 1378
- Fire Brigade, in London, 1798
- Fire-engine, attributed to Ctesibius of Alexandria about 250 B.C.
- Fire-engine, steam, John Braithwaite (British) 1830
- Fleming Valve: see Thermionic Valve
- Flintlock, invented 1588
- Flora, minor planet, John R. Hind (British) 1847
- Fluorine, Sir Humphry Davy (British) 1813
- Flying-shuttle in weaving, John Kay (British) 1733
- Fog Siren: see Siren
- Formic Acid, John Ray (British) 1670
- Fraunhofer's Lines, Joseph von Fraunhofer (German) 1814
- Fulminate of Mercury, Luke Howard (British) 1799
- Galvanising, Paul Jacques Malouin (French) 1742
- Galvanometer, André-Marie Ampère (French) 1820
- Gas Engine, John Barber (British), about 1780, but first made practical by Etienne Lenoir (French) 1860
- Gas-lighting, William Murdock (British) 1779
- Gaslight Printing Paper in photography, first made in America about 1897
- Gas Mantle, Baron Welsbach (Austrian) 1885
- Gas-meter, John Malam (British) 1820
- Gatling Gun, R. J. Gatling (American) 1862
- Gegenschein or Counterglow of Zodiacal Light, Borsen (German) about 1846
- Geissler Tube, Heinrich Geissler (German) about 1860
- Glass, first made in Egypt about 1550 B.C.
- Glauber Salts, Johann Glauber (German) about 1650
- Glycerine, Karl Scheele (Swedish) 1779
- Gnome Engine, first successful aero-engine, a French invention about 1909
- Goliwog, Bertha Upton (English) 1896
- Gramophone (originally called Phonograph), Thomas Alva Edison (American) 1877
- Gravitation Laws, Sir Isaac Newton (British) 1685
- Greek Fire, Callinicus of Heliopolis, A.D. 668
- Grenade, in France about 1536
- Guillotine, Antoine Louis (French) 1792
- Gun-cotton, Christian Schönbein (German) 1845
- Gun, Modern Big, built up of wrought iron and steel, Lord Armstrong (British) 1856
- Gunpowder, Roger Bacon (British) about 1292, or Bertholdus Schwartz (German) about 1320. Some say it was used by the Hindus 333 B.C.
- Gunpowder, Smokeless, Falkenstein (German) 1889
- Gyroscope, Jean Foucault (French) 1852
- Hammurabi's Code of Laws, found at Susa by J. de Morgan, 1901
- Hansom Cab, Joseph Hansom (British) 1833
- Harvey Process, for hardening steel plates, H. A. Harvey (American) 1891
- Hebe, minor planet, Hencke (German) 1847
- Helicopter, first designed by Leonardo da Vinci (Italian) about 1500
- Heliograph, H. Mance (British) 1875
- Heliometer, Auguste Savary (French) 18th century
- Helium, in the Sun, Sir Norman Lockyer (British) 1868; in the Earth, Sir William Ramsay (British) 1895
- Homoeopathy, Samuel Hahnemann (German) 1810
- Hot-blast, in iron smelting, James Neilson (British) 1828
- Hotchkiss Gun, Benjamin Hotchkiss (American) 1881
- Hydraulic Crane, Sir William Armstrong (British) 1846
- Hydraulic Press, Joseph Bramah (British) 1846
- Hydrochloric Acid, Le Comte (French) about 1510
- Hydrogen, Paracelsus (German Swiss) about 1500; recognised as an element by Henry Cavendish (British) 1766
- Hypnotism, Franz Mesmer (German) about 1766
- Ice, Artificial, made chemically, Walker (English) 1782
- Inoculation for Smallpox, first practised in India 1500 B.C.
- Insulin, Dr. Frederick Banting (Canada) 1923
- Iodine, Courtois (French) 1811
- Iridium, Smithson Tennant (British) 1804
- Iris, minor planet, John R. Hind (British) 1847
- Iron smelting with coal instead of charcoal, Dr. John Roebuck (British) 1762
- Jacquard loom, Joseph Marie Jacquard (French) 1801
- Jet Propulsion for aircraft, Frank Whittle (British) 1930-41
- Juno, minor planet, Carl Harding (German) 1804
- Jupiter, four of his moons first seen by Galileo (Italian) 1610
- Jupiter's great red spot, Professor Pritchett (American) 1878
- Kaleidoscope, Sir David Brewster (British) 1816
- Key bugle (also called Kent bugle), James Halliday (British) 1810
- Kinetscope, Thomas A. Edison (American) 1893
- Koenig's flame, Rodolphe Koenig (German) 1876
- Lace-making machine, Hammond (British) about 1768
- Laryngoscope, Manuel Garcia (Spanish) 1855
- Lathe, attributed to Talus, grandson of Daedalus, about 1240 B.C.
- Laughing gas (nitrous oxide), Joseph Priestley (British) 1772
- Leonids, meteors, first seen in A.D. 902
- Lewis gun, Colonel Isaac Newton Lewis (American) 1915
- Leyden jar, E. G. Von Kleist (German) 1746
- Lifeboat, Henry Greathead (British) 1789
- Life-saving net for fire brigades, The Haulon Brothers (American) about 1884
- Lightning conductor, Benjamin Franklin (American) about 1752
- Lightning's identity with electricity, Benjamin Franklin (American) 1752
- Light valve: see Sun valve
- Limelight, Thomas Drummond (British) 1826
- Linoleum, Elijah Galloway 1843
- Linotype machine in printing, Ottmar Mergenthaler (German - American), 1889
- Liquefaction of gases, Sir Humphry Davy (British) 1823
- Lithography, Alois Senefelder (German) about 1796
- Logarithms, John Napier (British) 1614
- Lucifer matches, Walker (British) 1827

Continued on next page

400 INVENTIONS AND DISCOVERIES WITH

Continued from previous page

- Macadamised roads, John MacAdam (British) 1819
- Machine gun, earliest type first used in American Civil War, 1861
- Magic lantern, Athanasius Kircher (German) 1646
- Magnesium, Sir Humphry Davy (British) 1808
- Magnesium light, Robert Bunsen (German) 1860
- Magnetic needle, dip of, Robert Norman (British) about 1576
- Majolica, Luca della Robbia (Italian) about 1440
- Malaria germ, true life-story of, Sir Ronald Ross (British) 1898
- Manganese, Joseph Gahn (Swedish) 1774
- Manometric flames: see Koenig's flames
- Margarine, Mege-Mouries (French) 1869
- Mars, canals of, Giovanni Schiaparelli (Italian) 1877
- Mars, moons of, Asaph Hall (American) 1884
- Matchlock, invented about 1460; first used in battle at Rhejan, 1525
- Maxim gun, Sir Hiram Maxim (American) 1884
- Maximite, high explosive, Hudson Maxim (American) about 1890
- Meat Extract, Baron Liebig (German) 1848
- Megaphone, Thomas Alva Edison (American) 1878
- Melinite, Eugène Turpin (French) 1886
- Mendelism, law of heredity, Gregor Mendel (Austrian) 1854
- Mercedised cotton, John Mercer (British) 1844
- Mercurial pump, Emanuel Swedenborg (Swedish) 1722
- Mercury vapour lamp, Peter C. Hewitt (British) 1902
- Mesmerism, Franz Mesmer (German) about 1766
- Metric system, a committee of seven Frenchmen 1790 to 1799
- Mezzotint engraving, Colonel Von Siegen (German) 1643
- Micrometer, William Gascoigne (British) 1638
- Microphone, Professor D. E. Hughes (British) 1878
- Microscope, Zacharias Jansen (Dutch) about 1590
- Mimeograph, Thomas Alva Edison (American) 1878
- Mineral waters: see Aerated waters
- Mines at sea, first used by Americans in 1776
- Minor planet, first photographic discovery of, Max Wolf (German) 1891
- Minor planets, first one, Ceres, discovered by Giuseppe Piazzi (Italian) 1801
- Minor planets, smallest 550 yards across, discovered by James E. Keeler (American) 1900
- Monitor, John Ericsson (Swedish) 1862
- Monotype machine, Talbot Lanston (American) about 1887
- Morphia, Serturmer (German) 1816
- Morse code, Samuel Morse and Alfred Vail (American) 1837
- Mors: telegraph instrument, Samuel Morse (American) 1832
- Motor-car, a gradual development. First self-propelling road vehicle by Nicolas Cugnot (French) 1768; first petrol-driven motor car by Gottlieb Daimler (German) 1885
- Mulready penny postage envelope, William Mulready (British) 1840
- Mustard gas, Guthrie (British) 1860
- Naphthalene, A. Garden (British) 1819
- Nebula in Andromeda, Abdurrahman Al-Sufi (Persian), middle of tenth century
- Nebula in Orion, Jean Baptiste Cysatus (Swiss) about 1618
- Nebular hypothesis, Pierre Laplace (French) 1796
- Neon, Sir William Ramsay (British) 1898
- Neptune, discovered by mathematical calculation, independently by John Adams (British) and U. J. J. Leverrier (French) 1846; actually seen by Dr. Johann Galle (German) and James Challis (English) 1846
- Neptune's moon, William Lassell (British) 1846
- Nernst lamp, Walther Nernst (German) 1897
- Nickel, Axel Cronstedt (Swedish) 1751
- Nitrogen, Daniel Rutherford (British) 1772
- Nitro-glycerine, Sobrero (Italian) 1847
- Nuclear fission, American and British scientists 1940 to 1945
- Okapi, Sir Harry Johnston (British) 1901
- Omnibus, first used in Paris 1818
- Ophthalmoscope, Hermann Helmholtz (German) 1851
- Optophone, Dr. E. E. Fournier d'Albe (British) 1914
- Orrery, fourth Earl of Orrery (British) 18th century
- Oxygen, Joseph Priestley (British) 1774
- Oxy-hydrogen blowpipe, Robert Hare (American) 1801
- Ozone, Christian Schönbein (German) 1839
- Paddle-wheels, William P. Miller (British) 1787
- Pallas, minor planet, Heinrich Olbers (German) 1802
- Panorama, Robert Barker (British) 18th century
- Pantograph, Christopher Scheiner (German) about 1603
- Paper-making machine, Louis Robert (French) about 1690
- Paraffin, Baron Karl von Reichenbach (German) 1830
- Paravane, Commander C. D. Burney (British) 1916
- Parchment, Eumenes of Pergamus, about 190 B.C.
- Penicillin, Sir Alexander Fleming (British) 1929
- Pens, steel, Wise (British) 1803
- Phonograph, Thomas Alva Edison (American) 1877
- Phonography (Pitman's shorthand) Sir Isaac Pitman (British) 1837
- Phosphorus, George Brandt (Swedish) 1670
- Photography, a gradual development. Thomas Wedgwood and Sir Humphry Davy (British) made sensitised paper and took prints of objects 1802; Joseph Niepce (French) improved this process 1814; Louis Daguerre (French), who had worked with Niepce, produced daguerrotype photographs in 1839; first negative photograph made by Henry Fox Talbot (British) 1839; first flash-light photograph by Mr. Brothers (British) 1864; first dry plate by Dr. R. L. Maddox (British) 1871; first colour photography, Franz Veress (Austrian) 1890
- Pianoforte, attributed variously to Cristofalli (Italian), J. C. Schroeter (German), and Marius (French) early in 18th century. Really evolved from earlier instruments
- Picric acid, Peter Woulfe (British) 1771
- Picture postcards, first used at Royal Naval Exhibition, London, 1891
- Pitdown Skull, Charles Dawson (British) 1912
- Pistol, invented at Pistoja, Italy, about 1500
- Pithecanthropus, Eugène Dubois (French) 1894
- Pitman's shorthand, Sir Isaac Pitman (British) 1837
- Planimeter, Hermann (German) 1814
- Pluto, the planet, Lowell Observatory (American) 1930
- Pneumatic tyre, J. B. Dunlop (British) 1888
- Pompeii, by an Italian peasant, 1748
- Portland cement, Joseph Aspdén (British) 1824
- Postage stamps, adhesive, James Chalmers (British) 1834
- Potassium, Sir H. Davy (British) 1807
- Potter's wheel, said to be invented by Anacharsis the Scythian, about 569 B.C.
- Printing (in Europe), Johann Gutenberg (German) about 1420. Printing from movable types was practised in China centuries earlier
- Printing from cast type, Peter Schoeffer (German) about 1440
- Printing machine, steam, with a revolving cylinder of paper, Friedrich Koenig (German) 1810
- Precession of the equinoxes, Hipparchus (Greek) 130 B.C.
- Prussian blue, Johann K. Diffel (German) early 18th century
- Quinine, Pierre Pelletier and Joseph Caventou (French) 1820
- Radar, or radio-location, British scientists 1934
- Radiometer, Sir William Crookes (British) 1875
- Radiotonomogram, Dr. E. E. Fournier d'Albe (British) 1924
- Radium, Madame Curie (Polish) and M. Curie (French) 1898
- Railways, began as wooden rails for horse-drawn trucks in 17th century. First steam locomotive by Trevithick (British) 1801; George Stephenson's first locomotive 1814; first steam railway, Stockton and Darlington, opened 1825
- Reaping machine, Rev. Patrick Bell (British) 1826
- Refrigerator, Jacob Perkins (British) 1834
- Regelation, of ice, Michael Faraday (British) 1850
- Regenerative furnace, Sir William Siemens (British) 1856
- Repeating watches and clocks, Edward Barlow, sometimes called Booth (British) 1676
- Revolver, Samuel Colt (American) 1835
- Rifled barrels for firearms, August Kottter (German) about 1520
- Rocket apparatus for saving life. Idea invented by Sergeant Bell (British)

NAMES, NATIONALITY, & DATES—CONTINUED

- 1791, first practical apparatus, Captain W. Manby (British) 1807
- Röntgen rays: see X-rays
- Rope-making machine, Richard Marsh (British) 1784
- Rosetta stone, by a French officer near Rosetta, Egypt, 1799
- Rotor Boat: see Sailless Sailing Ship
- Ruling machine, by a Dutchman in London 1782
- Saccharine, Fahlberg and Remsen (American) 1886
- Safety fuse, William Bickford (British) 1831
- Safety lamp, Sir Humphry Davy (British) 1815
- Sailless sailing ship, Anton Flettner (German) 1924
- Sam Browne Belt, General Sir Samuel Browne (British) before 1900
- Saraband, a stately dance, Sarabanda (Spanish) 16th century
- Saturn's dusky ring, William Bond (American) 1850
- Saturn's moons, four of them first seen by Giovanni Cassini (Italian) 1671, 1672, 1684
- Saturn's rings first seen as handles by Galileo (Italian) 1610
- Saturn's rings, with the dark division, first recognised by Giovanni Cassini (Italian) 1675
- Saw, band, William Newberry (British) 1808
- Saw, circular, Samuel Muller (British) 1777
- Screw-auger, William Henry (American) about 1755
- Screw propeller, Robert Hooke (British) 1681
- Sedan chair, first used at Sedan in France, early 17th century
- Seismometer or seismograph, Robert Mallet (British) 1858
- Selenium, John Berzelius (Swedish) 1817
- Serpent, musical instrument, Canon Guillaume (French) 16th century
- Sewing machine, Thomas Saint (English) 1792; first practical machine, Barthélemy Thimonnier (French) 1830; but first to be widely used, Elias Howe (American) about 1841
- Shell in warfare, first used about 1600
- Shrapnel shell, H. Shrapnel (British) 1784
- Siren, C. C. Daboll (American) 1870
- Slide rule, Edmund Gunter (British) 1620 and Edmund Winge (British) 1626
- Soda Water, first manufacture at Geneva at end of 18th century
- Sodium, Sir Humphry Davy (British) 1807
- Sonnet, form of verse, Guido d'Arezzo (Italian) about 1024
- Sound photography, Dr. E. E. Fournier d'Albe (British) 1924
- Spectacles attributed to Alexander de Spina (Italian) about 1285
- Spectroscope, Sir Isaac Newton (British) about 1672
- Spinning jenny, James Hargreaves (British) about 1764
- Spinning mule, Samuel Crompton (British) 1779
- Spinning roller, Sir Richard Arkwright (British) 1769
- Spiral nebula, first, Sir John Herschel (British) 1845
- Spirit-level, attributed to Robert Hooke (British) about 1660 and J. M. Thevenot (French) about 1690
- Sprengel pump, H. J. P. Sprengel (German) 1865
- Springs for watches and clocks, Dr. Hooke (British) 1735
- Steam engine, a gradual development from the aeolipile of Hero of Alexandria about 130 B.C.; Marquis of Worcester (British) describes a steam engine 1663; first steam engine with a piston by Denis Papin (French) 1690; first steam engine used regularly by Thomas Savery (British) 1698; first self-acting steam engine by Thomas Newcomen (British) 1712; James Watt's first engine, the real parent of modern engines, 1769. See Turbine
- Steam hammer, James Nasmyth (British) 1842
- Steam plough, John Heathcote, M.P. (British) 1832
- Steamship, a gradual development. In 1736 Jonathan Hulls (British) took out a patent for a steamboat, but this was only designed, never made; Count de Jouffroy (French) built a steamboat which ran on the Saone at Lyons 1783; John Fitch (American) built a paddle steamer in 1790; William Symington (British) successfully tried a steamboat in 1788, and in 1802 made the first steamboat for practical use
- Stereoscope, Sir Charles Wheatstone (British) 1838
- Stethoscope, René Laennec (French) 1816
- Stocking frame, in weaving, William Lee (British) 1589
- Stokes gun, or mortar, Sir George Stokes (British) 1915
- Submarine, a development. One said to have been invented in 1578, various improvements led to first really successful submarine by Torsten Nordenfelt (Swedish) 1885
- Sugar from beetroot, Andres Marggraff (German) 1747
- Sunshine recorder, J. F. Campbell (British) 1857
- Sun-valve for unattended lighthouses, Gustaf Dalén (Swedish) about 1900
- Tartaric acid, Karl Scheele (Swedish) 1770
- Taximeter, A. Gruner (German) 1895
- Telegraph, electric, Sir W. Cooke and Sir C. Wheatstone (British) 1837 and about the same time S. Morse (American)
- Telegraph, semaphore system, Claude Chappe (French) 1792
- Telephone, A. Graham Bell (British) 1877
- Telescope, reflecting, Sir Isaac Newton (British) 1668
- Telescope, refracting, a development. First suggested by Roger Bacon about 1250; arrangement of lenses to bring things near by Leonard Digges, before 1570; telescopes first constructed by John Lipperrhay, Zacharias Jansen, and James Metius (Dutch) about 1608
- Tel-el-Amarna tablets, found by Professor Flinders Petrie (British) 1888
- Television, first image televised by John L. Baird (British) 1923
- Tellurium, John Muller (German) 1782
- Thallium, Sir William Crookes (British) 1861
- Thermionic valve, J. A. Fleming (British) 1904. Grid added by Lee de Forest (American) 1907
- Thermometer, attributed to Galileo before 1597
- Thorium, John Berzelius (Swedish) 1828
- Threshing machine, Michael Menzies (British) about 1732
- Timber-bending machine, T. Blanchard (American) about 1854
- T.N.T. (trinitrotoluene), Wilbrand (German) 1863
- Tonic-sol-fa system of music, Miss Glover (British) about 1841
- Tonometer, H. Scheibler (German) 1834
- Torpedo, Robert Whitehead (British) 1866
- Torpedo boat destroyer, John Ericsson (Swedish) about 1870
- Torsion balance, Charles Coulomb (French) 1786
- Tourniquet, Morel (French) 1674
- Tramways, a development from colliery tramways. First modern tramway by G. F. Train (American) at New York, 1832
- Transit of Venus, first observed by Jeremiah Horrocks (British) 1639
- Transporter bridge, Charles Smith (British) middle of 19th century
- Tread-mill for prisons, Sir William Cubitt (British) 1817
- Tuberculin, Professor Robert Koch (German) 1890
- Tungsten, Don Fausto D'Elhuyar (Spanish) 1783
- Tunnelling, shield for, Sir Marc Isambard Brunel (British) about 1825
- Turbine, steam, Hero of Alexandria 130 A.C. In modern times the cupped turbine was invented by De Laval (Swedish) in 1888, and the bladed turbine by Sir Charles Parsons in 1884
- Tutankhamen's tomb, Howard Carter (British) 1922
- Typewriter, Mills (British) 1714, but first practical machine Charles Thurber (British) 1843
- Typographic etching, Dawson Brothers (British) 1873
- Uranium, Martin Klaproth (German) 1789
- Uranus, Sir William Herschel (British) 1781; previously seen twenty times, but supposed to be a small star
- Uranus, two moons of, Sir William Herschel (British) 1781. Two others found by William Lassell (British) 1851
- Vaccination for smallpox, Dr. Edward Jenner (British) 1796
- Venetian glass, at Venice about 1100
- Vesta, minor planet, Heinrich Olbers (German) 1807
- Vitamins, Dr. Eugene Wildiers (Belgian) 1901
- Vocalion, James B. Hamilton and John Farmer (British) 1875
- Volapuk, universal language, J. M. Schleyer (German) 1879
- Voltaic pile, Alessandro Volta (Italian) 1800
- Wall-paper, first used in Europe, in Spain and Portugal about 1555, used earlier in China and Japan
- Weaving power-loom, Edmund Cartwright (British) 1785
- Wireless, a development, made practical by Marconi (Italian) 1895
- Wool carding machine in spinning, Lewis Paul (British) 1748
- Wool-combing machine, Edmund Cartwright (British) 1789
- X-rays, Wilhelm Konrad Röntgen (German) 1895

350 ABBREVIATIONS IN EVERYDAY

- A.A. Automobile Association
A.A.A. Amateur Athletic Association
Al. At Lloyd's a ship that is classed as Al is a ship that is almost new or as good as new
A.B. Able-bodied seaman
A.C. Ante Christum—before Christ
A.C.A. Associate of the Institute of Chartered Accountants
A.C.C.I. Associate of City and Guilds of London Institute
A.D. Anno Domini—in the year of Our Lord
A.D.C. Aide-de-camp, an army officer who acts as personal assistant to a general
A.F.A. Associate of the Faculty of Actuaries; Amateur Football Association
A.F.C. Air Force Cross
A.F.R.Ac.S. Associate Fellow of the Royal Aeronautical Society
A.G. Adjutant-General
A.H. Anno Hegirae. The Mohammedans reckon their years from the Hegira, or the flight of Mohammed, in 622 A.D. Anno means in the year
A.I.C.E. Associate of the Institution of Civil Engineers
A.I.S.A. Associate of the Incorporated Secretaries Association
A.M. Ante meridiem—before noon; Anno mundi—in the year of the world
A.M.I.C.E. Associate Member of the Institution of Civil Engineers
A.M.I.E.E. Associate Member of the Institution of Electrical Engineers
A.O.F. Ancient Order of Foresters
A.Q.M.G. Adjutant - Quartermaster-General
A.R.A. Associate of the Royal Academy
A.R.A.M. Associate of the Royal Academy of Music
A.R.C.A. Associate of the Royal Cambrian Academy; Associate of the Royal College of Art
A.R.C.O. Associate of the Royal College of Organists
A.R.C.S. Associate of the Royal College of Science
A.R.H.A. Associate of the Royal Hibernian Academy, the Academy of Ireland
A.R.I.B.A. Associate of the Royal Institution of British Architects
A.R.P.S. Associate of the Royal Photographic Society
A.R.S.A. Associate of the Royal Scottish Academy; Associate of the Royal Society of Arts
A.R.S.L. Associate of the Royal Society of Literature
A.R.S.M. Associate of the Royal School of Mines (now Royal College of Science)
A.R.W.S. Associate of the Royal Society of Painters in Water-Colours
A.S.A.A. Associate of the Society of Incorporated Accountants and Auditors
B.A. Bachelor of Arts
B.B.C. British Broadcasting Corporation
B.C. Before Christ
B.Ch. Bachelor of Surgery (Latin, Baccalaureus Chirurgiae)
B.C.L. Bachelor of Civil Law
B.D. Bachelor of Divinity
B.E. Bachelor of Engineering
B.E.M. British Empire Medal
B.L. or LL.B. Bachelor of Laws
B.M. Bachelor of Medicine
B.M.A. British Medical Association
B.Mus. Bachelor of Music
B.O.A.C. British Overseas Airways Corporation
B.R.C.S. British Red Cross Society
B.Sc. Bachelor of Science
B.W.T.A. British Women's Temperance Association
C. Centigrade, the markings on the French or decimal thermometer
C. Roman numeral for 100, from the Latin, centum, a hundred
C.A. Chartered Accountant
C.B. Companion of Order of the Bath
C.B.E. Commander of the Order of the British Empire
C.C. County Council; Cricket Club; Cycling Club
C.E. Christian Endeavour; Civil Engineer
C.E.T.S. Church of England Temperance Society
Cf. A contraction of Confer, it is used in the sense of compare
C.f.i.c. Cost, freight, insurance, and commission
C.H. Companion of Honour
C.I. Imperial Order of the Crown of India
C.I.E. Companion of the Order of the Indian Empire
C.I.Mech.E. Companion of the Institution of Mechanical Engineers
C.M. Master in Surgery (Latin, Chirurgiae Magister); Common Metre
Cm. Centimetre, French measurement
C.M.G. Companion of the Order of St. Michael and St. George
C.M.S. Church Missionary Society
C.O. Commanding Officer
Co. Company; County
C.O.D. Cash on delivery
C.P.R. Canadian Pacific Railway
C.P.R.E. Council for the Preservation of Rural England
Cr. Credit or creditor
C.S. Chemical Society; Civil Service; Clerk to the Signet; Court of Session; Keeper of the Seal (Latin, Custos Sigilli)
C.S.C. Conspicuous Service Cross
C.S.I. Companion of the Order of the Star of India
C.T.C. Cyclists Touring Club
C.V.O. Commander of the Royal Victorian Order
Cwt. Hundredweight (Latin, C, centum), wt., weight
D. Penny or pence (Latin, denarius)
D.B.E. Dame Commander of the Order of the British Empire
D.C. Repeat from the beginning. A contraction used in music, standing for the Italian words, Da capo
D.C.L. Doctor of Civil Law
D.D. Doctor of Divinity
D.D.S. Doctor of Dental Surgery
Del. He or she drew it (Latin, De-lineavit)
D.F. Defender of the Faith; Dean of the Faculty
D.F.C. Distinguished Flying Cross
D.G. By the Grace of God (Latin, Dei Gratia)
D.Litt. Doctor of Literature, or Letters
D.M. Doctor of Medicine, Oxford University; Doctor of Music
Dr. Doctor or debtor
D.Sc. Doctor of Science
D.S.C. Companion of the Distinguished Service Order
D.V. God Willing (Latin, Deo Volente)
D.V.M. Doctor of Veterinary Medicine
dwt. Pennyweight
E.C.U. English Church Union
F. or Fahr. Fahrenheit
F.A. Football Association
F.A.I. Fellow of the Auctioneers Institute
F.A.S.L. Fellow of the Anthropological Society of London
F.C.A. Fellow of the Institute of Chartered Accountants
F.C.P. Fellow of the College of Preceptors
F.C.S. Fellow of the Chemical Society
F.D. or Fid.Def. Defender of the Faith (Latin, Fidei Defensor)
F.E.S. Fellow of the Entomological Society
F.F.A. Fellow of the Faculty of Actuaries
F.G.S. Fellow of the Geological Society
F.I.A. Fellow of the Institute of Actuaries
F.L.S. Fellow of the Linnean Society
F.M. Field-Marshal
f.o.b. Free on board, a shipping term
F.P. Fire plug
F.P.S. Fellow of Philological Society
F.R.Ae.S. Fellow of the Royal Aeronautical Society
F.R.A.M. Fellow of the Royal Academy of Music
F.R.A.A.S. Fellow of the Royal Astronomical Society; Fellow of the Royal Asiatic Society
F.R.B.S. Fellow of the Royal Botanical Society
F.R.C.O. Fellow of the Royal College of Organists
F.R.C.P. Fellow of the Royal College of Physicians
F.R.C.S. Fellow of the Royal College of Surgeons
F.R.C.V.S. Fellow of the Royal College of Veterinary Surgeons
F.R.G.S. Fellow of the Royal Geographical Society
F.R.Hist.Soc. Fellow of the Royal Historical Society
F.R.H.S. Fellow of the Royal Horticultural Society
F.R.I.B.A. Fellow of the Royal Institute of British Architects
F.R.Met.S. Fellow of the Royal Meteorological Society
F.R.P.S. Fellow of the Royal Photographic Society
F.R.S. Fellow of the Royal Society
F.R.S.A. Fellow of the Royal Society of Arts
F.R.S.E. Fellow of the Royal Society of Edinburgh
F.R.S.L. Fellow of the Royal Society of Literature
F.R.S.S. Fellow of the Royal Statistical Society
F.S.A. Fellow of the Society of Antiquaries
F.S.I. Fellow of the Royal Institute of Chartered Surveyors
F.Z.S. Fellow of the Zoological Society
G.B.E. Knight (or Dame) Grand Cross of the Order of the British Empire
G.C. George Cross
G.C.B. Knight Grand Cross of the Order of the Bath
G.C.I.E. Knight Grand Commander of the Order of the Indian Empire
G.C.M.G. Knight Grand Cross of the Order of St. Michael and St. George
G.C.S.I. Knight Grand Commander of the Order of the Star of India
G.C.V.O. Knight Grand Cross of the Royal Victorian Order
G.F.S. Girls Friendly Society
G.M. George Medal
G.M.T. Greenwich Mean Time
G.O.C. General Officer Commanding
G.P.O. General Post Office
G.R. King George (Latin, Georgius Rex)
Gr. Graine; Grm. gramme
H.E. His Excellency; His Eminence
H.G. His Grace; Horse Guards
H.H. His (or Her) Highness
H.I.H. His (or Her) Imperial Highness
H.M. His (or Her) Majesty
H.M.C. His Majesty's Customs
H.M.I.S. His Majesty's Inspector of Schools
H.M.S. His Majesty's Ship
H.Q. Headquarters
H.R.H. His (or Her) Royal Highness
H.R.S.A. Honorary Member of the Royal Scottish Academy
H.S.H. His (or Her) Serene Highness
H.W.M. High Water Mark
I.A. Incorporated Accountant
I.C.S. Indian Civil Service
id. Idem, the same
i.e. Id est, Latin for that is
I.H.S. Jesus, from the first three letters of the name when written in Greek capitals. With full points between, as I.H.S., the letters stand also for the Latin words Jesus Hominum Salvator (Jesus, Saviour of Men)
I.L.O. International Labour Organisation
I.M.S. Indian Medical Service
I.N.R.I. Jesus of Nazareth, King of the Jews. The letters stand for the Latin words Jesus Nazarenus Rex Judaeorum, which were written above the Cross. J and I are the same in Latin

USE, AND WHAT THEY STAND FOR

I.O.O.F. Independent Order of Odd-fellows
IOU. I owe you
I.S.O. Imperial Service Order
J.P. Justice of the Peace
K.B.E. Knight of the Order of the British Empire
K.C. King's Counsel
K.C.B. Knight Commander of the Order of the Bath
K.C.I.E. Knight Commander of the Order of the Indian Empire
K.C.M.G. Knight Commander of the Order of St. Michael and St. George
K.C.S.I. Knight Commander of the Order of the Star of India
K.C.V.O. Knight Commander of the Royal Victorian Order
K.G. Knight of the Garter
K.P. Knight of Order of St. Patrick
K.R.C. Knight of the Red Cross
K.T. Knight of Order of the Thistle
lb. Pound or pounds (Latin, Libra)
L.C.C. London County Council
L.Ch. Licentiate in Surgery
L.Cj. Lord Chief Justice
L.C.P. Licentiate of the College of Preceptors
L.D.S. Licentiate in Dental Surgery
Litt.D. Doctor of Letters (Literature)
LL.B. Bachelor of Laws (Latin, Legum Baccalaureus)
LL.D. Doctor of Laws (Latin, Legum Doctor)
L.P.T.B. London Passenger Transport Board
L.R.C.P. Licentiate of the Royal College of Physicians
L.R.C.P.E. Licentiate of the Royal College of Physicians, Edinburgh
L.R.C.S. Licentiate of the Royal College of Surgeons
L.R.C.V.S. Licentiate of the Royal College of Veterinary Surgeons
L.R.F.P.S. Licentiate of the Royal Faculty of Physicians and Surgeons, Glasgow
L.S. Linnaean Society
L.S.A. Licentiate of the Society of Apothecaries
L.s.d. Pounds, shillings, and pence (Latin, Librae, solidi, denarii)
M. One thousand (Latin, Mille)
M. or **Mons.** Monsieur, French for Mister
M.A. Master of Arts
M.B. Bachelor of Medicine (Latin, Medicinæ Baccalaureus)
M.B.E. Member of the Order of the British Empire
M.C. Military Cross
M.C.C. Marylebone Cricket Club
M.Ch. Master in Surgery (Latin, Magister Chirurgiae)
M.C.M.E.S. Member of the Civil and Mechanical Engineers Society
M.D. Doctor of Medicine (Latin, Medicinæ Doctor)
Mdlle or **Mlle.** Mademoiselle, French for Miss
Mgr. Monsignor or Monsignore, an Italian title of prelates
M.I.E.E. Member of the Institute of Electrical Engineers
M.I.Mar.E. Member of the Institute of Marine Engineers
M.I.M.E. Member of the Institution of Mining Engineers
M.I.Mech.E. Member of the Institution of Mechanical Engineers
M.I.M.M. Member of the Institute of Mining and Metallurgy
M.Inst.C.E. Member of the Institution of Civil Engineers
M.Inst.M.E. Member of the Institution of Mining Engineers
M.Inst.Met. Member of the Institute of Metals
M.I.S.I. Member of the Iron and Steel Institute
M.J.I. Member of the Institute of Journalists
M.L. Licentiate in Medicine

MM. Messieurs, French for gentlemen, plural of Monsieur; Military Medal
mm. Millimetre.
M.O.H. Medical Officer of Health
M.P. Member of Parliament
M.P.S. Member of the Pharmaceutical Society
M.R.A.S. Member of the Royal Academy of Science; Member of the Royal Asiatic Society
M.R.C.C. Member of the Royal College of Chemistry
M.R.C.P. Member of the Royal College of Physicians
M.R.C.S. Member of the Royal College of Surgeons
M.R.C.V.S. Member of the Royal College of Veterinary Surgeons
M.R.I. Member of the Royal Institution
MS. Manuscript, the plural being MSS
M.S. Master of Surgery
M.S.A. Member of the Society of Architects
m.s.l. Mean sea-level
M.S.S. Member of the Statistical Society
Mus.B. Bachelor of Music
Mus.D. Doctor of Music
Mus.M. Master of Music
M.V.O. Member of the Royal Victorian Order
NAAFI. Navy, Army, and Air Force Institute
N.B. Note well (Latin, Nota bene); North Britain or Scotland
N.C.O. Non-commissioned Officer
N.C.U. National Cyclists Union
Nem. Con. No one contradicting (Latin, Nemine contradicente)
No. Number (Latin, Numero)
N.P.L. National Physical Laboratory
N.S.P.C.C. National Society for the Prevention of Cruelty to Children
N.U.T. National Union of Teachers
N.U.T.N. National Union of Trained Nurses
N.U.W.W. National Union of Women Workers
Ob. Died (Latin, Obiit)
O.B.E. Officer of the Order of the British Empire
O.H.M.S. On His Majesty's Service
O.M. Order of Merit
O.S. Old Style, referring to the calendar before its change in George II's reign; Ordnance Survey
Oz. Ounce. The z represents a curious character in old manuscripts to denote an abbreviation
P. & O. Peninsular and Oriental Steam Navigation Company
P.C. Police Constable; Post card; Privy Councillor
Ph.B. Bachelor of Philosophy (Latin, Philosophiæ Baccalaureus)
Ph.D. Doctor of Philosophy (Latin, Philosophiæ Doctor)
P.M. Afternoon (Latin, Post Meridiem); Prime Minister; Postmaster
P.M.G. Postmaster-General
P.O. Patent Office; Post Office; Postal order
P.O.D. Pay on delivery
P.S. Pharmaceutical Society; Philological Society
P.S. Postscript (Latin, Post scriptum), a part of a letter written after or below signature of the writer
P.T.O. Please turn over
P.W.D. Public Works Department
Q.E.D. Which was to be demonstrated (Latin, Quad erat demonstrandum)
Q.E.F. Which was to be done (Latin, Quad erat faciendum)
Q.M.G. Quartermaster-General
q.v. Which see (Latin, Quad vide)
R. King or Queen (Latin, Rex or Regina)
R.A. Royal Academy; Royal Artillery
R.A.C. Royal Automobile Club
R.A.F. Royal Air Force

R.A.M. Royal Academy of Music
R.A.M.C. Royal Army Medical Corps
R.A.S. Royal Asiatic Society; Royal Astronomical Society
R.B.A. Royal Society of British Artists
R.B.S. Royal Society of British Sculptors
R.C.M. Royal College of Music
R.C.S. Royal College of Surgeons
R.D.I. Royal Designer for Industry
R.E. Royal Engineers
R.E.M.E. Royal Electrical and Mechanical Engineers
R.F. République Française; Royal Fusiliers
R.G.S. Royal Geographical Society
R.H.A. Royal Hibernian Academy
R.H.G. Royal Horse Guards
R.H.S. Royal Historical Society; Royal Horticultural Society; Royal Humane Society
R.I. Royal Institute of Painters in Water Colours; Royal Institution
R.I.B.A. Royal Institute of British Architects
R.I.P. Rest in peace (Latin, Requiescat in pace)
R.M. Royal Mail; Royal Marines
R.Met.S. Royal Meteorological Society
R.M.S. Royal Mail Steamer; Royal Microscopical Society; Royal Society of Miniature Painters
R.N. Royal Navy
R.N.R. Royal Naval Reserve
R.N.V.R. Royal Naval Volunteer Reserve
R.S. Royal Signals; Royal Society
R.S.A. Royal Scottish Academy
R.S.E. Royal Society of Edinburgh
R.S.L. Royal Society of Literature
R.S.M. Royal School of Mines
R.S.P.C.A. Royal Society for the Prevention of Cruelty to Animals
R.S.V.P. Reply, if you please, from the French Répondez s'il vous plait
R.S.W. Royal Scottish Water-Colour Society
Rt. Hon. Right Honourable
R.T.S. Religious Tract Society
R.U. Rugby Union
R.W.S. Royal Society of Painters in Water Colours
R.Y.S. Royal Yacht Squadron
S. Saint; Señor; Signor; South
s. Shillings (Latin, Solidi); Seconds
s.g. Specific gravity
S.J. Society of Jesus (Jesuits)
S.P.C.K. Society for the Promotion of Christian Knowledge
S.P.G. Society for the Propagation of the Gospel
T.D. Territorial Officers Decoration
T.U. Trade Union
T.U.C. Trade Union Congress
U.D.C. Urban District Council
U.K. United Kingdom
U.N. United Nations
U.N.E.S.C.O. United Nations Educational, Scientific, and Cultural Organisation
U.P. United Presbyterian (Church)
U.S.A. United States of America
U.S.S.R. Union of Soviet Socialist Republics
V. Roman numeral, five; versus, against; vide, see
V.C. Vice-Chancellor; Vice-Consul; Victoria Cross
Viz. Namely (Latin, Videlicet)
W.D. War Department
W.O. War Office; Warrant Officer
W.R.A.C. Women's Royal Auxiliary Corps
W.R.A.F. Women's Royal Air Force
W.R.N.S. Women's Royal Naval Service
W.S. Writer to the Signet
W.V.S. Women's Voluntary Services
X. An unknown quantity
Y.M.C.A. Young Men's Christian Association
Y.W.C.A. Young Women's Christian Association

PHYSIOLOGY TABLES—MAN & THE ANIMALS

RATE OF THE HEART-BEAT IN VARIOUS ANIMALS EACH MINUTE

Elephant ..	25 to 28
Horse ..	26 to 40
Ass ..	46 to 50
Ox ..	40 to 50
Man ..	70 to 80
Sheep ..	70 to 80
Goat ..	70 to 80
Pig ..	90 to 100
Dog ..	120 to 140
Cat ..	120 to 150
Rabbit ..	120 to 150
Birds ..	120 to 180

TIME OCCUPIED IN CIRCULATION OF THE BLOOD IN SECONDS

Dog ..	15 to 17
Goat ..	14
Rabbit ..	8
Squirrel ..	4½
Man ..	23

AVERAGE AMOUNT OF BLOOD IN VARIOUS ANIMALS

	Part of total Body Weight
Adult Man ..	one-thirteenth
Horse ..	one-eighteenth
Ox ..	one-thirtieth
Sheep ..	one-twenty-fifth
Goat ..	one-twenty-fifth
Pig ..	one-twenty-eighth
Dog ..	one-eighteenth
Cat ..	one-twentieth
Rabbit ..	one-thirty-second
Birds ..	one-twenty-ninth

NUMBER OF RESPIRATIONS A MINUTE

Horse ..	6 to 10
Ox ..	10 to 15
Sheep ..	12 to 20
Goat ..	12 to 20
Dog ..	15 to 28
Cat ..	20 to 30
Rabbit ..	50 to 60
Whale ..	4 to 5
Man ..	12 to 19

AVERAGE AGE WHEN THE TEETH COME

First Teeth

Central incisors (lower) ..	6th month
Central incisors (upper) ..	7th "
Lateral incisors (upper) ..	9th "
Lateral incisors (lower) ..	10th "
First molars ..	12th "
Canines ..	18th "
Second molars ..	2nd year, or later

Permanent Teeth

First molars ..	6½ years
Lower central incisors ..	7 "
Upper central incisors ..	8 "
Lateral incisors ..	9 "
First bicuspid ..	10 "
Second bicuspid ..	11 "
Canines ..	12 "
Second molars ..	13 "
Third molars (wisdom) 17 to 25, or later.	
The full set of permanent teeth is 32; 16 in each jaw.	

TEMPERATURE OF VARIOUS ANIMALS IN FAHRENHEIT

Ape ..	104	Monkey ..	104
Bat ..	100	Ox ..	102
Cat ..	102	Oyster ..	82
Chicken ..	111	Panther ..	102
Crow ..	109	Parrot ..	106
Dog ..	102	Pig ..	105
Donkey ..	98	Pigeon ..	109
Duck ..	111	Porpoise ..	100
Elephant ..	100	Rabbit ..	100
Fox ..	102	Rat ..	102
Glowworm ..	74	Shark ..	77
Goat ..	104	Sheep ..	104
Goose ..	107	Snail ..	76
Guinea-pig ..	100	Snake ..	88
Hare ..	100	Sparrow ..	108
Hen ..	108	Squirrel ..	102
Horse ..	99	Tiger ..	99
Jackal ..	101	Turkey ..	109
Jackdaw ..	107	Woodcock ..	108
Man ..	99	Wolf ..	105

AVERAGE HEIGHT AND WEIGHT OF HUMAN BEINGS

Age	Height of		Weight of	
	Male	Female	Male	Female
	ft. in.	ft. in.	st. lb.	st. lb.
1 ..	2 5½	2 3½	1 4½	1 4
2 ..	2 8½	2 7	2 4½	1 11½
3 ..	2 11	2 10	2 6½	2 3½
4 ..	3 1	3 0	2 9	2 8
5 ..	3 4	3 3	2 12	2 11
6 ..	3 7	3 6	3 2	2 13½
7 ..	3 10	3 8	3 7½	3 5½
8 ..	3 11	3 10½	3 13	3 10
9 ..	4 1	4 0	4 18	3 13½
10 ..	4 3	4 3	4 11½	4 6
11 ..	4 5	4 5	5 2	4 12
12 ..	4 7	4 7	5 6½	5 6½
13 ..	4 9	4 9	5 12½	6 3
14 ..	4 11	4 11	6 8	6 12½
15 ..	5 2	5 1	7 48	7 8½
16 ..	5 4	5 3	8 5	8 1
17 ..	5 6	5 5	9 11½	9 3½
18 ..	5 7½	5 7	9 13½	10 12
19 ..	5 7½	5 7	10 13½	11½
20 ..	5 7½	5 7	10 13½	11½
21 ..	5 7½	5 7	10 13½	11½
22 ..	5 7½	5 7	10 13½	11½
23 ..	5 7½	5 7	10 13½	11½
24 ..	5 7½	5 7	10 13½	11½
25 ..	5 7½	5 7	10 13½	11½
26 ..	5 7½	5 7	10 13½	11½
27 ..	5 7½	5 7	10 13½	11½
28 ..	5 7½	5 7	10 13½	11½
29 ..	5 7½	5 7	10 13½	11½
30 ..	5 7½	5 7	10 13½	11½
31 ..	5 8	5 1	11 6	8 9
32 ..	5 8	5 1	11 6	8 9
33 ..	5 8	5 1	11 6	8 9
34 ..	5 8	5 1	11 6	8 9
35 ..	5 8	5 1	11 6	8 9

AVERAGE WEIGHT AND CHEST MEASUREMENT FOR HEIGHT OF A MAN OF THIRTY

Height		Weight		Chest
ft.	in.	wt.	lb.	Circumference
5	0	8	0	33½
5	1	8	4	34
5	2	9	0	35
5	3	9	7	35
5	4	9	13	36
5	5	10	2	37
5	6	10	5	37½
5	7	10	8	38
5	8	11	1	38½
5	9	11	8	39
5	10	12	1	39½
5	11	12	6	40
6	0	12	10	40½
6	1	13	0	41

AVERAGE HEIGHT AND WEIGHT OF A WOMAN (DRESSED)

Height	Weight	
	ft. in.	st. lb.
4 10 ..	7 0	0
4 11 ..	7 4	0
5 0 ..	7 7	0
5 1 ..	7 12	0
5 2 ..	8 2	0
5 3 ..	8 9	0
5 4 ..	9 2	0
5 5 ..	9 9	0
5 6 ..	9 13	0
5 7 ..	10 8	0
5 8 ..	11 4	0

AVERAGE WEIGHT OF HUMAN ORGANS

Heart	oz.
Male ..	10 to 12
Female ..	8 to 10
Lungs	
Right ..	23
Left ..	19
Stomach ..	4½ to 5
Liver ..	45 to 60
Pancreas ..	3
Spleen ..	5 to 7
Kidney ..	4½ to 5½
Brain	
Male ..	50
Female ..	44

WEIGHT OF THE BRAIN OF VARIOUS NATIONALITIES

	ounces		ounces
Scottish ..	50	Pawnee ..	47.1
German ..	49.6	Italian ..	46.9
English ..	49.5	Hindu ..	45.1
French ..	47.9	Gipsy ..	44.8
Zulu ..	47.5	Bushman ..	44.6
Chinese ..	47.2	Eskimo ..	43.9

WEIGHT OF THE BRAIN IN VARIOUS RACES OF MAN

	grammes
European Man ..	1367
Woman ..	1204
Oceanian Man ..	1319
Woman ..	1219
American Man ..	1308
Woman ..	1187
Asiatic Man ..	1304
Woman ..	1194
African Man ..	1293
Woman ..	1211
Australian Man ..	1214
Woman ..	1111

WEIGHT OF THE BRAIN COMPARED WITH THE REST OF THE BODY

Small Singing Bird	one part out of	12
Marmoset ..	" "	22
Capuchin ..	" "	25
Monkey ..	" "	28
Magpie ..	" "	28
Rat ..	" "	28
Gibbon ..	" "	28
Woman ..	" "	35
Mole ..	" "	36
Man ..	" "	36
Lemur ..	" "	42
Half-grown Chimpanzee ..	" "	51
Cat ..	" "	82
Adult Gorilla ..	" "	104
Tapir ..	" "	104
Pigeon ..	" "	160
Eagle ..	" "	160
Lizard ..	" "	160
Frog ..	" "	172
Dog ..	" "	214
Carp ..	" "	248
Fowl ..	" "	347
Sheep ..	" "	351
Goose ..	" "	360
Horse ..	" "	400
Young Elephant ..	" "	500
Tiger ..	" "	500
Lion ..	" "	500
Ox ..	" "	500
Ostrich ..	" "	1200
Land Turtle ..	" "	2240
Shark ..	" "	2496
Sea Turtle ..	" "	5680
Tunny ..	" "	37,440

TIME REQUIRED FOR DIGESTION OF VARIOUS FOODS

	Hrs. Min.
Rice ..	1 0
Raw Eggs ..	1 30
Apples ..	1 30
Boiled Sago ..	1 45
Boiled Milk ..	2 0
Stale Bread ..	2 0
Boiled Turkey ..	2 25
Broiled Lamb ..	2 30
Baked Potatoes ..	2 30
Boiled Beans ..	2 30
Boiled Parsnips ..	2 30
Raw Oysters ..	2 55
Boiled Eggs ..	3 0
Boiled Mutton ..	3 0
Roast Beef ..	3 0
New Bread ..	3 15
Boiled Carrots ..	3 15
Boiled Turnips ..	3 30
Boiled Potatoes ..	3 30
Butter ..	3 30
Cheese ..	3 30
Stewed Oysters ..	3 30
Hard-boiled Eggs ..	3 30
Boiled Pork ..	3 30
Roast Fowl ..	4 0
Roast Goose ..	4 30
Cabbage ..	4 30
Roast Pork ..	5 15
Roast Veal ..	5 30

WEIGHTS AND MEASURES

COMPREHENSIVE SERIES OF TABLES FOR QUICK AND READY REFERENCE

The abbreviations commonly used are given with each weight or measure

AVOIRDUPOIS WEIGHT

16 drams, dr.	= 1 ounce, oz.
16 ounces	= 1 pound, lb.
14 pounds	= 1 stone, st.
28 pounds	= 1 quarter, qr.
4 quarters	= 1 hundredweight, cwt.
20 hundredweights	= 1 ton, t.
100 pounds	= 1 cental, or short cwt.
2000 pounds	= 1 short ton
7000 grains	= 1 pound

TROY WEIGHT

3.1683 grains	= 1 carat
24 grains, gr.	= 1 pennyweight, dwt.
20 pennyweights	= 1 ounce, oz.
12 ounces or 5760 grains	= 1 pound, lb.

APOTHECARY'S WEIGHT, DRY

20 grains, gr.	= 1 scruple, ℥
3 scruples	= 1 drachm, ℥
8 drachms	= 1 ounce, ℥
12 ounces	= 1 pound, lb.

APOTHECARY'S MEASURE, LIQUID

60 minims or drops, ℥	= 1 fluid drachm, f℥
8 fluid drachms	= 1 fluid ounce, f℥
20 fluid ounces	= 1 pint, O
8 pints	= 1 gallon, Cong.

LINEAR MEASURE

12 inches, ins.	= 1 foot, ft.
3 feet	= 1 yard, yd.
5½ yards	= 1 rod, rd., pole, po., or perch, per.
40 poles	= 1 furlong, fur.
8 furlongs	= 1 mile, mi.
3 miles	= 1 league

LAND MEASURE

7.92 inches	= 1 link, li.
25 links	= 1 rod, rd.
4 rods or 100 links	= 1 chain, ch.
80 chains	= 1 mile, mi.

SQUARE MEASURE

144 square inches,	sq. in. =	1 square foot, sq. ft.
9 square feet	=	1 square yard, sq. yd.
30 $\frac{1}{4}$ square yards	=	1 square rod, sq. rd.; square pole, sq. po. ; or square perch, sq. per.
40 square poles	=	1 rood, r.
4 roods	=	1 acre, ac.
640 acres	=	1 square mile, sq. mi.

LAND SQUARE MEASURE

625 square links,		
sq. li.	=	1 square rod, sq. rd.
16 square rods	=	1 square chain,
		sq. ch.
10 square chains	=	1 acre, ac.
640 acres	=	1 square mile,
		sq. mi.

CUBIC OR SOLID MEASURE

1728 cubic inches,	= 1 cubic foot, cu. in.
27 cubic feet	= 1 cubic yard, cu. yd.

LIQUID MEASURE

4 gills, gill	= 1 pint, pt.
2 pints	= 1 quart, qt.
4 quarts	= 1 gallon, gal.

DRY MEASURE

2 pints, pt.	= 1 quart, qt.
4 quarts	= 1 gallon, gal.
2 gallons	= 1 peck, pk.
4 pecks	= 1 bushel, bush.
8 bushels	= 1 quarter, qr.
36 bushels	= 1 chaldron, chal.
5 quarters	= 1 wey
2 weys	= 1 last

CIRCULAR MEASURE

60 seconds, "	= 1 minute, '
60 minutes	= 1 degree, °
30 degrees	= 1 sign, s.
90 degrees	= 1 right angle, rt. L, or quadrant, ☐
180 degrees	= 1 semi-circle, ☐
360 degrees	= 1 circle, ○

HAY AND STRAW WEIGHT

36 pounds of straw	= 1 truss
56 pounds of old hay	= 1 truss
60 pounds of new hay	= 1 truss
36 trusses	= 1 load
1 load of straw	= 11 cwt. 64 lb.
1 load of old hay	= 18 cwt.
1 load of new hay	= 19 cwt. 32 lb.

WOOL WEIGHT

7 pounds avoirdupois	= 1 clove
14 pounds	= 1 stone
28 pounds	= 1 tod
182 pounds	= 1 wey
364 pounds	= 1 sack
4368 pounds	= 1 last
20 pounds	= 1 score
12 score	= 1 pack

MEASURES OF TIME

60 seconds, sec.	= 1 minute, min.
60 minutes	= 1 hour, hr.
24 hours	= 1 day, dy.
7 days	= 1 week, wk.
2 weeks	= 1 fortnight
4 weeks	= 1 lunar month, mo.
365¼ days or 52 weeks, or 12 calendar months or 13 lunar months	= 1 year
366 days	= 1 leap year
100 years	= 1 century
1000 years	= 1 millennium

NAUTICAL MEASURES

6 feet	= 1 fathom, fa.
100 fathoms	= 1 cable's length
10 cable's lengths or 1000 fathoms	= 1 nautical mile
60 nautical miles	= 1 degree
360 degrees	= the Earth's circumference
1 knot (a measure of speed)	= 1 nautical mile per hour

QUARTER DAYS

In England and Ireland

Lady Day	..	March 25
Midsummer	..	June 24
Michaelmas	..	September 29
Christmas	..	December 25

In Scotland

Candlemas	..	February 2
Whitsun	..	May 15
Lammas	..	August 1
Martinmas	..	November 11

OLD ENGLISH MEASURES

72 points	= 1 inch
12 lines	= 1 inch
3 barley corns	= 1 inch
¼ inch	= 1 digit
2½ inches	= 1 nail, n.
3 inches	= 1 palm
4 inches	= 1 hand, hd.
9 inches	= 1 span
1½ yards	= 1 English ell
1½ yards	= 1 French ell
37.06 inches	= 1 Scottish ell
18 inches	= 1 cubit
3 feet or 5 feet	= 1 pace
4 bushels	= 1 coomb
1 yoke of land (¼ acre)	= 1 day's work for two oxen

MISCELLANEOUS MEASURES

8 pounds	= 1 stone of meat
56 pounds	= 1 firkin of butter
12 articles	= 1 dozen
13 articles	= 1 long dozen
12 dozen	= 1 gross
12 gross	= 1 great gross
20 articles	= 1 score
24 sheets	= 1 quire
20 quires	= 1 ream
1 lac	= 100,000
10 gallons	= 1 anker of wine
18 gallons	= 1 runlet
42 gallons	= 1 tierce

The hogshhead and the pipe vary according to the kind of wine

MONEY TABLE

4 farthings	= 1 penny
12 pence	= 1 shilling
20 shillings	= 1 pound, or sovereign
2 shillings	= 1 florin
2s. 6d.	= 1 half-crown
5 shillings	= 1 crown

FOREIGN MONEY

Owing to the chaos wrought among the exchanges by the world wars, foreign money has varied very much since the year 1914 and still more since 1939 in its relative value to British money, and the rates of exchange continue to fluctuate. Furthermore, new units of currency have been introduced in countries such as Austria and Portugal, and others sprung into existence with the creation of new states, such as Czechoslovakia. But this table shows the approximate value of the standard coins of many foreign countries in 1914 and in 1939.

	1914	1939
	s. d.	s. d.
Argentina (Peso) ..	3 11½	1 0½
Brazil (Milreis) ..	2 0½	3
Denmark (Kroner) ..	1 0½	10½
Egypt (Pound) ..	20 3½	20 6½
France (Franc) ..	9½	2½
Germany (Mark) ..	10½	1 8½
Holland (Florin) ..	1 8	2 4½
India (Rupee) ..	1 10½	1 1½
Japan (Yen) ..	4 3½	1 2
Mexico (Peso) ..	4 3½	1 2
Norway (Kroner) ..	1 0½	1 0½
Russia (Rouble) ..	3 2	8½
Spain (Peseta) ..	9½	3
Sweden (Kroner) ..	1 0½	1 1½
U.S.A. (Dollar) ..	4 2	4 6

WEIGHTS AND MEASURES TABLES

OLD ENGLISH COINS

1 groat	=	4 pence
1 tester	=	6 pence
1 noble	=	6s. 8d.
1 angel	=	10s.
1 half guinea	=	10s. 6d.
1 mark	=	13s. 4d.
1 guinea	=	£1 1s.
1 Carolus	=	£1 3s.
1 Jacobus	=	£1 5s.
1 Moidore	=	£1 7s.
1 Joannes	=	£1 16s.

YARDS IN A MILE IN MANY COUNTRIES

England and U.S.A.	1760
English (Geographical)	2029
English (Admiralty)	2027
English (Nautical)	2026
Chinese	682
Danish	8244
German (Geographical)	8100
Hungarian	9113
Irish	2240
French (marine)	6075
Italian	2025
Russian (a verst)	1167
Scottish	1976½
Swiss	9166
Swedish	11,704
Turkish	1821

POUNDS IN A BUSHEL OF VARIOUS FOODS

Beans	66
Salt	65
Lentils	63
Peas	63
Maize	60
Wheat	60
Onions	57
Potatoes	56
Barley	55
Rye	54
Swedes	45
Turnips	45
Carrots	40
Parsnips	40
Oats	40

POUNDS IN A CUBIC FOOT OF TIMBER

Alder	33
Ash	46
Beech	46
Birch	40
Horse Chestnut	35
Spanish Chestnut	41
English Elm	43
Silver Fir	30
Hazel	39
Hornbeam	45
Larch	38
Lime	28
Maple	42
Oak	53
Scots Pine	32
Poplar	30
Norway Spruce	30
Sycamore	41
Willow	33

STRENGTH OF ICE

1½ inches thick will support a man
 4 inches thick will support horsemen
 10 inches thick will support a crowd
 18 inches thick will support a railway train.

AVERAGE WEIGHT OF ONE PECK

Apples	16 pounds
Cherries	18 "
Currants	14 "
Gooseberries	16 "
Green peas	8 "
Onions	16 "
Plums	18 "
Pears	18 "
Potatoes	14 "
Raspberries	12 "
Turnips	12 "

POUNDS IN A CUBIC FOOT OF MATERIAL

Aluminium	165
Brass	525
Copper	550
Cast Iron	437 to 474
Wrought Iron	474 to 486
Steel	500
Lead	711
Tin	456
Cement	86 to 94
Coal	79 to 80
Coke	46
Glass	158
Ice	57.4
Loose Snow	5 to 12
Moist Snow	15 to 20
Tar	63
Air	-0807
Water	62.32
Steam	-038
Asphalt	156
Portland Cement	86 to 94
Chalk	145 to 162
Flint	162 to 170
Granite	160 to 167
Limestone	162
Portland Stone	151
Quartz	166
Sandstone	157 to 165
Slate	180
Rock Salt	140
Dry Clay	75
Wet Clay	116
Dry Earth	78
Wet Earth	98
Dry Garden Mould	68
Wet Garden Mould	102
Dry Peat	32
Wet Peat	70
Dry Sand	111
Wet Sand	136

THE METRIC SYSTEM

MEASURES OF WEIGHT

10 milligrammes,	= 1 centigramme,
mg.	cg.
10 centigrammes	= 1 decigramme, dg.
10 decigrammes	= 1 gramme, g.
10 grammes	= 1 decagramme, Dg.
10 decagrammes	= 1 hectogramme,
	Hg.
10 hectogrammes	= 1 kilogramme, Kg.
10 kilogrammes	= 1 myriagramme,
	Mg.
10 myriagrammes	= 1 quintal, Ql.
10 quintals	= 1 tonne, T.

LINEAR MEASURE

10 millimetres,	= 1 centimetre, cm.
mm.	
10 centimetres	= 1 decimetre, dm.
10 decimetres	= 1 metre, m.
10 metres	= 1 decametre, Dm.
10 decametres	= 1 hectometre, Hm.
10 hectometres	= 1 kilometre, Km.
10 kilometres	= 1 myriametre,
	Mm.

SQUARE MEASURE

100 square millimetres, sq. mm. or	mm. ² = 1 square centimetre, sq. cm.
or cm. ²	
100 square centimetres	= 1 square
decimetre, sq. dm. or dm. ²	
100 square decimetres	= 1 square
metre or 1 centiare, sq. m. or m. ² ,	ca.
100 square metres (centiares)	= 1
square decametre or 1 are, sq. Dm.	
or Dm. ² , a.	
100 square decametres (ares)	= 1
square hectometre or 1 hectare, sq.	
Hm. or Hm. ² , Ha.	
100 square hectometres (hectares)	=
1 square kilometre, sq. Km. or Km. ²	

CUBIC MEASURE

1000 cubic millimetres, cu.mm. or mm. ³	
= 1 cubic centimetre, cu.cm. or cm. ³	
1000 cubic centimetres	= 1 cubic deci-
metre, cu.dm. or dm. ³	
1000 cubic decimetres	= 1 cubic metre,
cu.m., or m. ³	

MEASURE OF CAPACITY

10 millimetres, ml.	= 1 centilitre, cl.
10 centilitres	= 1 decilitre, dl.
10 decilitres	= 1 litre, l.
10 litres	= 1 decolitre, Dl.
10 decolitres	= 1 hectolitre, Hl.
10 hectolitres	= 1 kilolitre, Kl.
10 kilolitres	= 1 myriolitre, Ml

AVERAGE NUMBER OF SEEDS IN A POUND

Chicory	335,000
Flax	108,000
Parsnip	100,000
Carrot	250,000
Mustard	75,000
Mangel Wurzel	24,000
Cabbage	120,000
Turnip	170,000
White Clover	686,000
Red Clover	249,000
Pea	1500
Wheat	11,100
Oats	17,500
Barley	10,000
Rye	20,000
Kohl-rabi	131,000
Alder	300,000
Ash	6500
Beech	2000
Birch	800,000
Spanish Chestnut	115
Horse Chestnut	110
Elm	70,000
Hornbeam	14,000
Larch	75,000
Lime	5000
Maple	5000
Oak	130
Silver Fir	10,000
Scots Pine	70,000
Spruce	54,000
Sycamore	5000

WEIGHTS AND MEASURES TABLES

UNITS OF MEASUREMENT

One Horse Power is the force required to raise 33,000 pounds one foot in one minute

One Foot Pound is the energy required to raise one pound one foot

One Dyne is the force which acting on one gramme for one second generates a velocity of one centimetre a second

One Erg is the amount of work done by one dyne acting through one centimetre

One Poundal is the force which acting for one second upon one pound gives it a velocity of one foot per second. It is equal to 13,825.5 dynes

One Atmosphere is the pressure of 14.7 pounds per square inch equal to 34 feet of water or 29.92 inches of mercury

The British Thermal Unit (B.Th.U.) is the quantity of heat required to increase the temperature of one pound of water by one degree Fahrenheit when it is at a temperature of 39.1 degrees Fahr

The Unit of Pressure is one pound acting on a surface of one square inch

One Candle-power is the light given by one spermaceti candle, $\frac{1}{8}$ inch in diameter and $\frac{1}{8}$ pound in weight burning at the rate of 120 grains per hour

One Calorie is the quantity of heat required to raise the temperature of 1 kilogramme of water 1 degree Centigrade at, or near, 4 degrees Centigrade

One Therm, the name given to the British thermal unit of heat, is equal to 252 calories

One Joule is equal to 10,000,000 ergs

One light year is 5,876,068,880,000 miles

In Astronomy one unit of length is the mean radius of the Earth's orbit, 92,900,000 miles

A Micron is the millionth of a metre

The Gauss is a magnetic unit equal to one line of force per square centimetre

UNITS OF ELECTRICITY

A Volt is the unit for measuring pressure or electro-motive force, and is the electrical pressure which, if steadily applied to a conductor whose resistance is one ohm, will produce a current of one ampère

An Ohm is the unit for measuring resistance, and is the resistance offered to a current by a column of mercury at the temperature of melting ice, the mass being 14.45 grammes, the height of the column 106.3 centimetres, and the section one square millimetre

An Ampère is the unit for measuring current, and is the current one volt will drive through one ohm

A Coulomb is the unit for measuring quantity, and is equal to one ampère flowing for one second

A Microfarad is the unit for measuring capacity, and is equal to the capacity of about three miles of an ocean cable

A Watt is the unit for measuring power, and is equal to a current of one ampère at a pressure of one volt

A Joule is the work done in one second in maintaining a current of one ampère against a resistance of one ohm

A Farad is the capacity of a condenser charged to one volt by one coulomb

A Watt-hour is the energy obtained by maintaining a power of one watt for one hour

A Kilowatt-hour is the Board of Trade unit, and is the equivalent of 1000 watts acting for one hour

MEASURES OF ELECTRICITY

1,000,000 microvolts	= 1 volt
1000 millivolts	= 1 volt
1000 volts	= 1 kilovolt
1,000,000 microhms	= 1 ohm
1,000,000 ohms	= 1 megohm
1 watt-hour	= 3600 joules
1000 watts	= 1 kilowatt
1,000,000 microfarads	= 1 farad
1,000,000 microampères	= 1 ampère
1000 milliampères	= 1 ampère
1 mil	= one-thousandth of an inch

A wire 1 foot long and 1 mil in diameter is 1 mil foot

Resistance per mil-foot is a unit much used

CONVERSION TABLES

LINEAL MEASURES FOR TURNING

millimetres into inches	multiply by .0937
inches into millimetres	multiply by 25.4
centimetres into inches	multiply by .3937
inches into centimetres	multiply by 2.54
decimetres into inches	multiply by .3937
inches into decimetres	multiply by .254
metres into inches	multiply by 39.370113
inches into metres	multiply by .0254
metres into feet	multiply by 3.280843
feet into metres	multiply by .3048
metres into yards	multiply by 1.0936143
yards into metres	multiply by .914399
metres into poles	multiply by .1988
poles into metres	multiply by 5.0292
hectometres into yards	multiply by 109.3614
yards into hectometres	multiply by .009144
kilometres into yards	multiply by 1093.6143
yards into kilometres	multiply by .0009144
kilometres into miles	multiply by .62137
miles into kilometres	multiply by 1.6093

SUPERFICIAL MEASURES FOR TURNING

square millimetres into square inches	multiply by .00155
square inches into square millimetres	multiply by 645.16
square centimetres into square inches	multiply by .155
square inches into square centimetres	multiply by 6.4516
square decimetres into square inches	multiply by 15.5
square inches into square decimetres	multiply by .064516
square decimetres into square feet	multiply by .10764
square feet into square decimetres	multiply by 9.2903
square metres into square feet	multiply by 10.7639
square feet into square metres	multiply by .92903
square metres into square yards	multiply by 1.196
square yards into square metres	multiply by .836126
square decametres into square yards	multiply by 119.6
square yards into square decametres	multiply by .008361
square decametres into square poles	multiply by 3.954
square poles into square decametres	multiply by .25293

square decametres into roods	multiply by .098844
roods into square decametres	multiply by 10.117
square hectometres into acres	multiply by 2.4711
acres into square hectometres	multiply by .40458
square hectometres into square miles	multiply by .00386
square miles into square hectometres	multiply by 259
square kilometres into square miles	multiply by .386
square miles into square kilometres	multiply by 2.59

CUBIC MEASURE FOR TURNING

cubic millimetres into cubic inches	multiply by .000061
cubic inches into cubic millimetres	multiply by 16387
cubic centimetres into cubic inches	multiply by .0610
cubic inches into cubic centimetres	multiply by 16.387
cubic decimetres into cubic inches	multiply by 61.024
cubic inches into cubic decimetres	multiply by .016387
cubic metres into cubic feet	multiply by 35.3148
cubic feet into cubic metres	multiply by .028317
cubic metres into cubic yards	multiply by 1.307954
cubic yards into cubic metres	multiply by .764553

WEIGHTS

To turn

milligrammes into grains	multiply by .015432
grains into milligrammes	multiply by 64.8
centigrammes into grains	multiply by .154
grains into centigrammes	multiply by 6.48
decagrammes into grains	multiply by 1.543
grains into decagrammes	multiply by .648
grammes into grains	multiply by 15.432
grains into grammes	multiply by .0648
grammes into drams (avoirdupois)	multiply by .05644
drams (avoirdupois) into grammes	multiply by 1.772
grammes into pennyweights (troy)	multiply by .643
pennyweights (troy) into grammes	multiply by 1.5552
grammes into scruples (apothecary's)	multiply by .7716
scruples (apothecary's) into grammes	multiply by 1.296
grammes into drachms (apothecary's)	multiply by .2572
drachms (apothecary's) into grammes	multiply by 3.888
grammes into ounces (avoirdupois)	multiply by .03527
ounces (avoirdupois) into grammes	multiply by 28.350
grammes into ounces (troy)	multiply by .03215
ounces (troy) into grammes	multiply by 31.1035
grammes into ounces (apothecary's)	multiply by .03215
ounces (apothecary's) into grammes	multiply by 31.1035

WEIGHTS AND MEASURES TABLES

hectogrammes into ounces (avoirdupois) multiply by 3.527
 ounces (avoirdupois) into hectogrammes multiply by .2835
 kilogrammes into grains multiply by 15432.3564
 grains into kilogrammes multiply by .0000648
 kilogrammes into ounces (avoirdupois) multiply by 35.27
 ounces (avoirdupois) into kilogrammes multiply by .02835
 kilogrammes into pounds (avoirdupois) multiply by 2.2046223
 pounds (avoirdupois) into kilogrammes multiply by .45359243
 kilogrammes into hundredweights multiply by .01968
 hundredweights into kilogrammes multiply by 50.80
 kilogrammes into tons multiply by .000984
 tons into kilogrammes multiply by 1016

CAPACITY

To turn

decilitres into gills multiply by .7
 gills into decilitres multiply by 1.42
 decilitres into pints multiply by .176
 pints into decilitres multiply by 5.682
 litres into pints multiply by 1.7598
 pints into litres multiply by .5682
 litres into quarts multiply by .88
 quarts into litres multiply by 1.136
 litres into gallons multiply by .219975
 gallons into litres multiply by 4.5459631
 decalitres into gallons multiply by 2.19975
 gallons into decalitres multiply by .4546
 kilolitres into gallons multiply by 219.975
 gallons into kilolitres multiply by .004546
 centilitres into fluid ounces multiply by .3519
 fluid ounces into centilitres multiply by 2.84123
 decilitres into fluid ounces multiply by 3.5196
 fluid ounces into decilitres multiply by .284
 decalitres into bushels multiply by .275
 bushels into decalitres multiply by 3.637
 hectolitres into bushels multiply by 2.75
 bushels into hectolitres multiply by .3637
 hectolitres into quarters multiply by .34381
 quarters into hectolitres multiply by 2.909
 kilolitres into bushels multiply by 27.5
 bushels into kilolitres multiply by .03637
 kilolitres into quarters multiply by 3.4381
 quarters into kilolitres multiply by .2909

COMPOUND FACTORS

To turn

pounds per lineal foot into kilogrammes per lineal metre multiply by 1.488
 kilogrammes per lineal metre into pounds per lineal foot multiply by 0.672
 pounds per lineal yard into kilogrammes per lineal metre multiply by 0.496
 kilogrammes per lineal metre into pounds per lineal yard multiply by 2.016

tons per lineal foot into kilogrammes per lineal metre multiply by 3333.33
 kilogrammes per lineal metre into tons per lineal foot multiply by 0.0003
 tons per lineal yard into kilogrammes per lineal metre multiply by 1111.11
 kilogrammes per lineal metre into tons per lineal yard multiply by 0.0009
 pounds per miles into kilogrammes per kilometre multiply by 0.2818
 kilogrammes per kilometre into pounds per mile multiply by 3.548
 pounds per square inch into kilogrammes per square centimetre multiply by 0.0703
 kilogrammes per square centimetre into pounds per square inch multiply by 14.223
 tons per square inch into kilogrammes per square millimetre multiply by 1.575
 kilogrammes per square millimetre into tons per square inch multiply by 0.635
 pounds per square foot into kilogrammes per square metre multiply by 4.883
 kilogrammes per square metre into pounds per square foot multiply by 0.2048
 tons per square foot into tonnes per square metre multiply by 10.936
 tonnes per square metre into tons per square foot multiply by 0.0914
 tons per square yard into tonnes per square metre multiply by 1.215
 tonnes per square metre into tons per square yard multiply by 0.823
 pounds per cubic yard into kilogrammes per cubic metre multiply by 0.5933
 kilogrammes per cubic metre into pounds per cubic yard multiply by 1.686
 pounds per cubic foot into kilogrammes per cubic metre multiply by 16.02
 kilogrammes per cubic metre into pounds per cubic foot multiply by 0.0624
 tons per cubic yard into tonnes per cubic metre multiply by 1.329
 tonnes per cubic metre into tons per cubic yard multiply by 0.752
 pounds per gallon into kilogrammes per litre multiply by 0.09983
 kilogrammes per litre into pounds per gallon multiply by 10.438
 inch-tons into kilogrammetres multiply by 25.8
 kilogrammetres into inch-tons multiply by .0387
 foot-pounds into kilogrammetres multiply by 0.1382
 kilogrammetres into foot-pounds multiply by 7.233
 foot-tons into tonne-metres multiply by 0.309
 tonne-metres into foot-tons multiply by 3.23
 heat units into calories multiply by 0.252
 calories into heat units multiply by 3.968
 heat units per square foot into calories per square metre multiply by 2.713
 calories per square metre into heat units per square foot multiply by 0.369

CONVERTING ENGLISH WEIGHTS AND MEASURES

To turn

feet into links multiply by 1.5151
 links into feet multiply by .66
 chains into miles multiply by .0125
 miles into chains multiply by 80
 Scottish miles into English miles multiply by 1.123
 English miles into Scottish miles multiply by .89
 Irish miles into English miles multiply by 1.272
 English miles into Irish miles multiply by .785
 Russian versts into English miles multiply by .6629
 English miles into Russian versts multiply by 1.508
 square feet into acres multiply by .0000229
 acres into square feet multiply by 43,560
 square yards into square miles multiply by .00000322
 square miles into square yards multiply by 3,097,600
 square miles into acres multiply by 640
 acres into square miles multiply by .001562
 cubic feet into bushels multiply by .778
 bushels into cubic feet multiply by 1.285
 cubic inches into gallons multiply by .003604
 gallons into cubic inches multiply by 277.463
 cubic feet of water into pounds multiply by 62.2786
 pounds of water into cubic feet multiply by .01605
 cubic feet of water into tons multiply by .0278
 tons of water into cubic feet multiply by 35.9

QUICK WAYS OF RECKONING

The formulæ given above enable us to get exact figures, but there are rough and ready ways of changing one measure or weight into another so as to give us approximate results, and some of the more useful are given here.

To turn

metres into feet multiply by 3½
 feet into metres multiply by 3 and divide by 10
 metres into yards add one-tenth
 yards into metres deduct one-tenth
 kilometres into miles multiply by 5 and divide by 8
 miles into kilometres add five-eighths of the number
 square metres into square yards add one-fifth
 square yards into square metres deduct one-fifth
 square kilometres into square miles multiply by 2 and divide by 5
 square miles into square kilometres multiply by 2½
 cubic metres into cubic yards add one-third
 cubic yards into cubic metres deduct one-third
 kilogrammes into pounds (avoirdupois) add a tenth and multiply by 2
 pounds into kilogrammes deduct a tenth and divide by 2
 litres into pints add three-quarters
 pints into litres multiply by 3 and divide by 5

WEIGHTS AND MEASURES

THE ELEMENTS WITH THEIR CHEMICAL SYMBOLS AND THEIR ATOMIC WEIGHTS

Alabama...	Ab	221
Aluminium...	Al	27.1
Antimony...	Sb	120.2
Argon...	Ar	39.9
Arsenic...	As	74.96
Barium...	Ba	137.37
Beryllium...	Be	9.1
Bismuth...	Bi	208
Boron...	B	10.9
Bromine...	Br	79.92
Cadmium...	Cd	112.4
Cæsium...	Cs	132.81
Calcium...	Ca	40.07
Carbon...	C	12
Cerium...	Ce	140.25
Chlorine...	Cl	35.46
Chromium...	Cr	52
Cobalt...	Co	58.97
Columbium...	Cb	93.1
Copper...	Cu	63.57
Dysprosium...	Dy	162.5
Erbium...	Er	167.7
Europium...	Eu	152
Fluorine...	F	19
Gadolinium...	Gd	157.3
Gallium...	Ga	70.1
Germanium...	Ge	72.5
Gold...	Au	197.2
Hafnium...	Ha	178.6
Helium...	He	4
Holmium...	Ho	163.5
Hydrogen...	H	1.008
Illinium...	Il	—
Indium...	In	114.8
Iodine...	I	126.92
Iridium...	Ir	193.1
Iron...	Fe	55.84
Krypton...	Kr	82.92
Lanthanum...	La	139
Lead...	Pb	207.2
Lithium...	Li	6.94
Lutecium...	Lu	175
Magnesium...	Mg	24.32
Manganese...	Mn	54.93
Masurium...	Ma	—
Mercury...	Hg	200.5
Molybdenum...	Mo	96
Neodymium...	Nd	144.3
Neon...	Ne	20.2
Nickel...	Ni	58.68
Nitrogen...	N	14.008
Osmium...	Os	190.9
Oxygen...	O	16
Palladium...	Pd	106.7
Phosphorus...	P	31.04
Platinum...	Pt	195.2
Potassium...	K	39.1
Praseodymium...	Pr	140.9
Radium...	Ra	226
Radon or Niton...	Rn	222
Rhenium...	Re	186.3
Rhodium...	Rh	102.9
Rubidium...	Rb	85.45
Ruthenium...	Ru	101.7
Samarium...	Sa	150.4
Scandium...	Sc	44.1
Selenium...	Se	79.2
Silicon...	Si	28.3
Silver...	Ag	107.88
Sodium...	Na	23
Strontium...	Sr	87.63
Sulphur...	S	32.06
Tantalum...	Ta	181.5
Tellurium...	Te	127.5
Terbium...	Tr	159.2
Thallium...	Tl	204
Thorium...	Th	232.15
Thulium...	Tm	168.5
Tin...	Sn	118.7
Titanium...	Ti	48.1
Tungsten...	W	184
Uranium...	U	238.2
Vanadium...	V	51
Virginium...	Vi	225
Xenon...	X	130.2
Ytterbium or Neoytterbium...	Yb	173.5
Yttrium...	Y	89.33
Zinc...	Zn	65.37
Zirconium...	Zr	90.6

MATHEMATICAL AND OTHER SIGNS

+	plus, the sign of addition
-	minus, the sign of subtraction
×	the sign of multiplication
÷	the sign of division
is to	is to
as	as
because	because
therefore	therefore
equals	equals
infinity	infinity
square root	square root
cube root	cube root
fourth root, and so on	fourth root, and so on
%	per cent
is unequal to	is unequal to
is greater than	is greater than
is not greater than	is not greater than
is less than	is less than
is not less than	is not less than
is parallel to	is parallel to
is not parallel to	is not parallel to
is perpendicular to	is perpendicular to
equilateral	equilateral
angle	angle
angles	angles
right angle	right angle
equiangular	equiangular
equality	equality
triangle	triangle
square	square
rectangle	rectangle
parallelopiped	parallelopiped
circle	circle
circumference	circumference
semicircle	semicircle
arc	arc
at	at
dollars	dollars
pounds Egyptian	pounds Egyptian
pounds Turkish	pounds Turkish
numbered	numbered
male	male
female	female
sun	sun
new moon	new moon
first quarter of moon	first quarter of moon
full moon	full moon
last quarter of moon	last quarter of moon
Planet	Planet
Earth	Earth
Mercury	Mercury
Venus	Venus
Mars	Mars
Jupiter	Jupiter
Saturn	Saturn
Uranus	Uranus
Neptune	Neptune
Comet	Comet
Fixed Star	Fixed Star
conjunction	conjunction
opposition	opposition
ascending node	ascending node
descending node	descending node

ROMAN NUMERALS

I—1	C—100
II—2	CC—200
III—3	CCC—300
IV—4	CD—400
V—5	D—500
VI—6	DC—500
VII—7	DCC—600
VIII—8	DCCC—700
IX—9	M—1000
X—10	CI—1000
XI—11	CC—1100
XII—12	CCC—1200
XIII—13	CD—1300
XIV—14	CE—1400
XV—15	CI—1500
XVI—16	CC—1600
XVII—17	CCC—1700
XVIII—18	CD—1800
XIX—19	CE—1900
XX—20	CC—2000
XXX—30	CCC—3000
XL—40	CD—4000
L—50	CE—5000
LX—60	CC—6000
LXX—70	CCC—7000
LXXX—80	CD—8000
XC—90	CE—9000
CCC(XXX)—100,000	
CCC(XXX)—1,000,000	

RELATIVE CONDUCTIVITY OF METALS

Metals are conductors of heat, but they conduct it in very varying degrees. Silver is the best, and reckoning its conductivity as 100, here are the metals in their order :

Silver	100	Iron	11.9
Copper	73.6	Steel	11.6
Gold	53.2	Lead	8.5
Aluminium	31.3	Platinum	8.4
Zinc	28.1	Bismuth	1.8
Tin	15.2	Mercury	1.3

MELTING POINTS OF METALS

The fusion point of a metal is the temperature at which it melts and becomes a liquid. This varies greatly for different metals, as we see here :

Metal	Degrees Fahrenheit	Degrees Centigrade
Aluminium	1214.6	657
Copper	1985	1085
Gold	1947.2	1064
Iridium	3542	1950
Cast Iron	2192	1200
Wrought Iron	2741	1505
Lead	620.6	327
Mercury	—37.8	—38.8
Nickel	2703.2	1484
Osmium	3992	2200
Platinum	3191	1755
Silver	1760	960
Steel	2520	1382
Tantalum	3902	2150
Tin	449.6	232
Tungsten	over 5432	over 3000
Zinc	786.2	419

STRENGTH OF METALS

Here is the tensile strength, or resistance, reckoned in pounds per square inch, which various metals offer to separation :

Cast Aluminium	15,000
Cast Brass	18,000
Brass Wire	49,000
Bronze	36,000
Cast Copper	19,000
Copper Wire	60,000
Cast Iron	16,500
Wrought Iron	50,000
Sheet Lead	3300
Steel	45,000 to 120,000
Bessemer Steel Wire	2,896,000
Cast Tin	4600
Zinc	7000 to 8000

WATER FACTS AND FIGURES

One gallon occupies 277.274 cubic inches, or .16 cubic feet
One gallon weighs 10 pounds
One cubic foot weighs 62.32 pounds
One cubic foot of sea-water weighs 64 pounds
One cubic foot contains 6.232 gallons
One cubic foot is equal to 28.375 litres
One cubic inch of water weighs .036 pounds
One cubic yard contains 170 gallons
One cubic yard weighs 15 hundred-weights
One ton of sea water occupies 34.937 cubic feet
One ton of fresh water occupies 35.88 cubic feet
One ton of fresh water contains 224 gallons
One cubic foot of ice weighs 57.8 pounds
Water boils at 100° Cent., 212° Fahr., 80° Réaumur
Fresh water freezes at zero Cent. and Réaumur, and 32° Fahr.
Sea water freezes at 27° Fahr.
Sea water is equal to 1.027 the weight of pure water
Pure water is equal to .973 the weight of sea water.

VELOCITY OF WATER NEEDED FOR REMOVING MATERIALS

3 ft. a second will move	fine clay
6 "	fine sand
8 "	coarse sand
12 "	gravel
(one inch in diameter)	
36 "	move stones
(as large as hen's eggs)	

Physicists have made many new so-called "unstable" elements.

WEIGHTS OF MATERIALS

A Cubic Foot of Brickwork

The weight of a cubic foot of ordinary brickwork is 112 pounds, but if the work consists of the best pressed bricks the weight is 140 pounds.

A Cubic Foot of Cement

English Portland cement is very heavy, a cubic foot weighing 90 pounds, against only the 50 or 60 of American cement.

A Cubic Foot of Clay

A cubic foot of clay in loose lumps weighs about 63 pounds, but a cubic foot of potter's clay weighs 119 pounds.

A Cubic Foot of Copper

If the copper is cast, a cubic foot weighs 542 pounds; if it is rolled, 548 pounds.

A Cubic Foot of Earth

A cubic foot of common loam, dry and loose, weighs about 76 pounds; if it is moderately rammed, 95 pounds; if it is soft, flowing mud, it will weigh 108 pounds.

A Cubic Foot of Gravel or Sand

The weight varies according to the texture of the material. Pure quartz sand, dry and loose, weighs from 90 to 106 pounds a cubic foot; well-shaken sand weighs 99 to 117 pounds; wet sand, 120 to 140 pounds.

A Cubic Foot of Glass

A cubic foot of common window glass weighs on an average about 157 pounds.

A Cubic Foot of Gold

A cubic foot of pure hammered gold weighs 1217 pounds; pure cast gold only 1204 pounds.

A Cubic Foot of Water

One cubic foot of fresh water is equal to 62½ pounds, and measures 6¼ gallons. This is at 62 degrees Fahrenheit, and with the barometer's pressure at 30. A cubic foot of sea water weighs 64 pounds. In one ton of fresh water there are 35.88 cubic feet, and in a ton of salt water 34.937 cubic feet.

Salt Water and Fresh Water

973 parts of sea water weigh about the same as 1000 parts of pure water; in other words, sea water is 1.027 the weight of pure water.

A Gallon of Water

A gallon of water weighs 10 pounds, and occupies 277½ cubic inches. There is a useful old rhyme which says, "A pint of pure water weighs a pound and a quarter."

A Cubic Foot of Coal

The weight depends on the coal. A cubic foot of Welsh anthracite, broken, weighs 58.28 pounds; of Welsh bituminous coal, 53 pounds; of Lancashire coal, 50 pounds; of Newcastle coal, 50 pounds; and of Scottish coal, 53 pounds. There are 39 cubic feet of Welsh anthracite in a ton of coal, 42 of Welsh bituminous, 45 of Lancashire, 45 of Newcastle, and 42 of Scottish.

A Cubic Foot of Metal

Lead, a cubic foot of which weighs 711 pounds, is the heaviest common metal; silver comes next with 655 pounds to the foot; then copper, 542 pounds; steel, 490 pounds; cast tin, 459

pounds; cast iron, 450 pounds; zinc, 437.5 pounds. These, however, are all very light compared with platinum, which has 1342 pounds to the cubic foot, and gold, 1217 pounds to the foot; though they are very heavy compared with aluminium, a cubic foot of which weighs only 162 pounds.

A Cubic Foot of Ice

A cubic foot of ice weighs 57.8 pounds; in other words it is about 4½ pounds lighter than a cubic foot of water.

A Cubic Foot of Air

At 60 degrees Fahrenheit and ordinary atmospheric pressure, a cubic foot of air weighs 536.2 grains, or 1.225 ounces avoirdupois.

A Cubic Foot of Hydrogen Gas

At 60 degrees Fahrenheit and ordinary atmospheric pressure, a cubic foot of hydrogen, the lightest of all known substances, weighs 37.2 grains, or not quite a twelfth of an ounce avoirdupois.

A Cubic Foot of Steam

At 212 degrees Fahrenheit, the boiling point of water, a cubic foot of steam weighs 275.8 grains, or about three-fifths of an ounce avoirdupois. One cubic inch of water, which weighs 252½ grains, will form rather more than one cubic foot of steam.

A Cubic Foot of Carbon Dioxide

At 60 degrees Fahrenheit and ordinary atmospheric pressure, a cubic foot of carbon dioxide weighs 819.8 grains, or nearly two ounces avoirdupois.

A Cubic Foot of Brass

Brass is properly an alloy of copper and zinc, and a cubic foot of cast brass weighs 504 pounds, while a cubic foot of rolled brass weighs 524 pounds.

A Cubic Foot of Salt

If the salt is coarse, a cubic foot weighs about 45 pounds, but if it is fine, like that for table use, it would be at least 49 pounds.

A Cubic Foot of Snow

Freshly fallen snow weighs only from five to twelve pounds a cubic foot; but if it is moistened by rain it may weigh anything from 15 to 50 pounds a foot.

A Cubic Foot of Lime

If the lime is in small lumps a cubic foot weighs about 53 pounds; but if it is thoroughly shaken together a foot weighs 75 pounds.

A Cubic Foot of Stone

The weight varies very much according to the stone. A cubic foot of granite weighs 170 pounds; of limestone or marble, 168 pounds; quartz, 165 pounds; sandstone, 151 pounds; shale, 162 pounds; slate, 175 pounds.

A Cubic Foot of Iron

If it is cast iron a cubic foot weighs 450 pounds; if pure wrought iron, 485 pounds.

A Cubic Foot of Ivory

Ivory is a fairly heavy substance, and a cubic foot weighs 114 pounds.

THE QUICKEST WAY OF FINDING THINGS

The Area of a Triangle

The area of a triangle is equal to the base multiplied by half the perpendicular height; or if we know the length of the three sides AB, BC, CA, and half their sum is represented by S, we can find the area by using the formula $S(S-AB)(S-BC)(S-CA)$, and by taking the square root of the result.



The Area of an Equilateral Triangle

The area of an equilateral triangle can be found by multiplying the square of the length of one side by $\cdot433$.

If we have the Length of Two Sides of a Right-Angled Triangle, how can we find the Third Side?

If we have the base and perpendicular we should square each of these, add the results together, and take the square root of the sum; that will give us the length of the hypotenuse, or side opposite the right angle. If we have the length of the hypotenuse and one other side, we should square them both, subtract the smaller number from the larger, and take the square root of the result. That will be the third side.



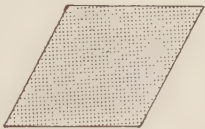
The Area of a Parallelogram

To find the area of a parallelogram, we have to multiply the base by the perpendicular height.



The Area of a Rhombus or Square

In addition to the last-mentioned method we may multiply the two diagonals together and divide the result by two.



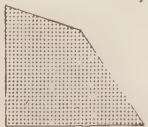
The Area of a Trapezium

A trapezium is a four-sided figure having two of its sides parallel, and we find the area by taking half the sum of the two parallel sides and multiplying by the perpendicular distance between them. The result is the area.



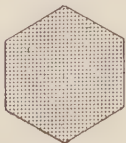
The Area of a Trapezoid

A trapezoid is a four-sided figure of which no two sides are parallel. We find its area by multiplying the longest diagonal by half the sum of the two perpendiculars falling on it from the opposite angles. Another method of finding the area of any figure of four or more unequal straight sides is to divide it into triangles and find the area of each, adding these together for the result.



The Area of a Hexagon, Octagon, or any Regular-sided Figure

Take half the radius of the inscribed circle (that is, the circle drawn inside the figure and touching all its sides), multiply this by the length of one side, and then multiply the result by the number of the sides.



The Circumference of a Circle

Multiply the diameter of the circle by $3\cdot1416$, or, more roughly, by $3\frac{1}{7}$.

The Diameter of a Circle

If we have the length of the radius we multiply that by two to find the diameter of a circle; if we have the length of the circumference we multiply that by $\cdot31831$.

The Area of a Circle

There are many ways of finding the area of a circle. We may multiply half the radius by the circumference; or we may square the radius and multiply by $3\cdot1416$; or we may square the diameter and multiply by $\cdot7854$; or we may square the circumference and divide by $3\cdot1416$ multiplied by four; or we may square the circumference and multiply by $\cdot07958$; or we may find the area of a triangle having a base equal to the circumference and a height equal to the radius.



The Circumference of an Ellipse

Take half the sum of the long and short diameters and multiply by $3\cdot1416$. The answer gives the circumference.

The Area of an Ellipse

Take the long diameter, multiply it by the short diameter, and multiply the result by $\cdot7854$.



The Length of the Arc of a Circle

The simplest way to find this is to subtract the chord of the whole arc from eight times the chord of half the arc, and divide the remainder by three.



The Area of the Sector of a Circle

Multiply the length of the arc by one half the radius and the result is the area of the sector.



The Area of the Segment of a Circle

We find the area of a sector having the same arc by the method given in the last paragraph, and then subtract from the result the area of the triangle formed by the radii and the chord.



The Area of the Surface of a Sphere

This is found by squaring the diameter and multiplying by $3\cdot1416$; or by multiplying the diameter by the circumference.



The Cubic Contents of a Sphere

To find this we must cube the diameter and multiply by $\cdot5236$; or we take the area of the surface and then multiply it by one-third of the radius.

The Area of the Surface of a Cylinder

Add the areas of the two ends to the result of the circumference of one end multiplied by the length. This will give the area of the surface.



The Cubic Contents of a Cylinder

Multiply the area of one end by the length of the cylinder; the result is the cubic contents.

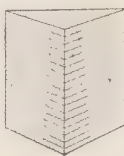
THE QUICKEST WAY OF FINDING THINGS

The Area of the Surface of a Prism

To find this add the areas of the two ends to the perimeter, or distance round one end multiplied by the length.

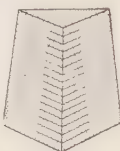
The Cubic Contents of a Prism

Multiply the area of one end by the length of the prism and the result is the cubic contents.



The Cubic Contents of a Prismoid

A prismoid is a body that approaches to the form of a prism without being actually a prism; that is, its sides are not parallelograms. To find its contents we proceed thus: to the sum of the area of the two ends we add four times the middle area and multiply the sum by one-sixth the height.



The Area of the Surface of a Cone

To find this multiply the slant height by the circumference of the base, and divide the result by two. Then to the result add the area of the base.



The Cubic Contents of a Cone

To find this multiply one-third of the perpendicular by the area of the base.

The Area of the Surface of a Pyramid

Multiply the slant height by the perimeter of the base, divide by two, and add the area of the base. The result will give the area of the surface.



The Cubic Contents of a Pyramid

Multiply one-third of the perpendicular height by the area of the base to find the cubic contents.

The Length of a Ring

There are various ways of finding the length of a ring. We may multiply the sum of the radii of the outer and inner boundaries by 3.1416; or we may take half the sum of the outer and inner boundaries; or we may subtract the circumference of the cross section from the outer boundary; or we may add the inner boundary to the circumference of the cross section.



The Area of the Surface of a Plane Ring

The surface of a plane ring is the space between two concentric circles, and its area is found by adding the two radii together, multiplying by their difference, and then multiplying the result by 3.1416.

The Area of the Surface of a Solid Ring

Multiply the circumference of the circular section of the ring by the length of the ring, and the result is the area of the surface.

The Cubic Contents of a Ring

To find this multiply the area of the cross section by the length of the ring.

The Cubic Contents of a Spherical Shell

This means the space occupied by the actual material of a hollow ball, and we find it by subtracting the cube of the inner diameter from



the cube of the outer diameter and multiplying the result by .5236.

The Cubic Contents of the Frustum of a Sphere

The frustum of a sphere is the part between two parallel planes. Its contents are found by squaring the radius of the base, adding the square of the radius of the top, multiplying by three, adding result to square of height, and multiplying by .5236 of the height.



The Cubic Contents of the Segment of a Sphere

The segment of a sphere is the part cut off by a single plane, and its contents are found by squaring the radius of the base, multiplying the result by three, then adding that result to the square of the height, and multiplying the whole by .5236 of the height.



The Area of the Surface of a Frustum

A frustum is also the part of a solid figure next to the base left after cutting off the top part by a plane parallel to the base. The area of its surface is found by multiplying the slant height by the perimeter of the two ends added together, dividing by two, and then adding to the result the areas of both ends.



The Cubic Contents of a Frustum

To the area of the two ends add the square root of their product and multiply by one-third of the height to find the cubic contents.

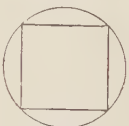
The Area of a Parabola

A parabola is formed when we intersect or cut a cone with a plane parallel with its side. The area of the surface thus exposed is found by multiplying the base by two-thirds the height.



The Length of the Side of a Square Inscribed in a Circle

Multiply the diameter of the circle by .707 and the result gives the side of the inscribed square.

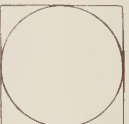


The Diameter of a Circle Circumscribing a Square

Multiply the side of the square by 1.414.

The Length of the Side of a Square Circumscribing a Circle

This square of course has a side exactly equal to the diameter of the circle that it circumscribes, or fits round.



The Length of the Side of a Square Equal in Area to a Circle

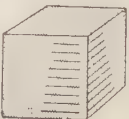
Multiply the diameter of the circle by .8862.

The Diameter of a Circle Equal in Area to a Square

Multiply the side of the square by 1.1284.

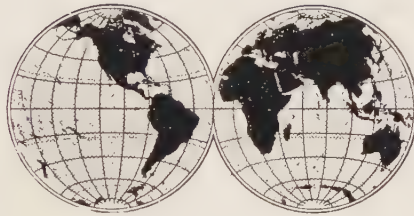
The Cubic Contents of a Cube

Multiply the length by the breadth and the result by the height; in other words, cube the side, and the result is the volume or cubic contents.



ATLAS OF THE WORLD

37 Colour Maps of All Countries



THE WORLD

with British Commonwealth in red

EUROPE

GREAT BRITAIN AND IRELAND

Physical Features

ENGLAND AND WALES

SCOTLAND

IRELAND

FRANCE

SPAIN AND PORTUGAL

SWITZERLAND

HOLLAND, BELGIUM, AND LUXEMBURG

SCANDINAVIA

GERMANY

ITALY

BALKANS

CENTRAL EUROPE

WESTERN U.S.S.R. AND FINLAND

ANCIENT GREECE

ROMAN EMPIRE

THE ANCIENT EAST

NEAR EAST

ASIA

INDIA, PAKISTAN, CEYLON, AND BURMA

FAR EAST

EAST INDIES

AFRICA

SOUTH AFRICA

NORTH AMERICA

CANADA

THE GREAT LAKES

UNITED STATES

CENTRAL AMERICA AND WEST INDIES

SOUTH AMERICA

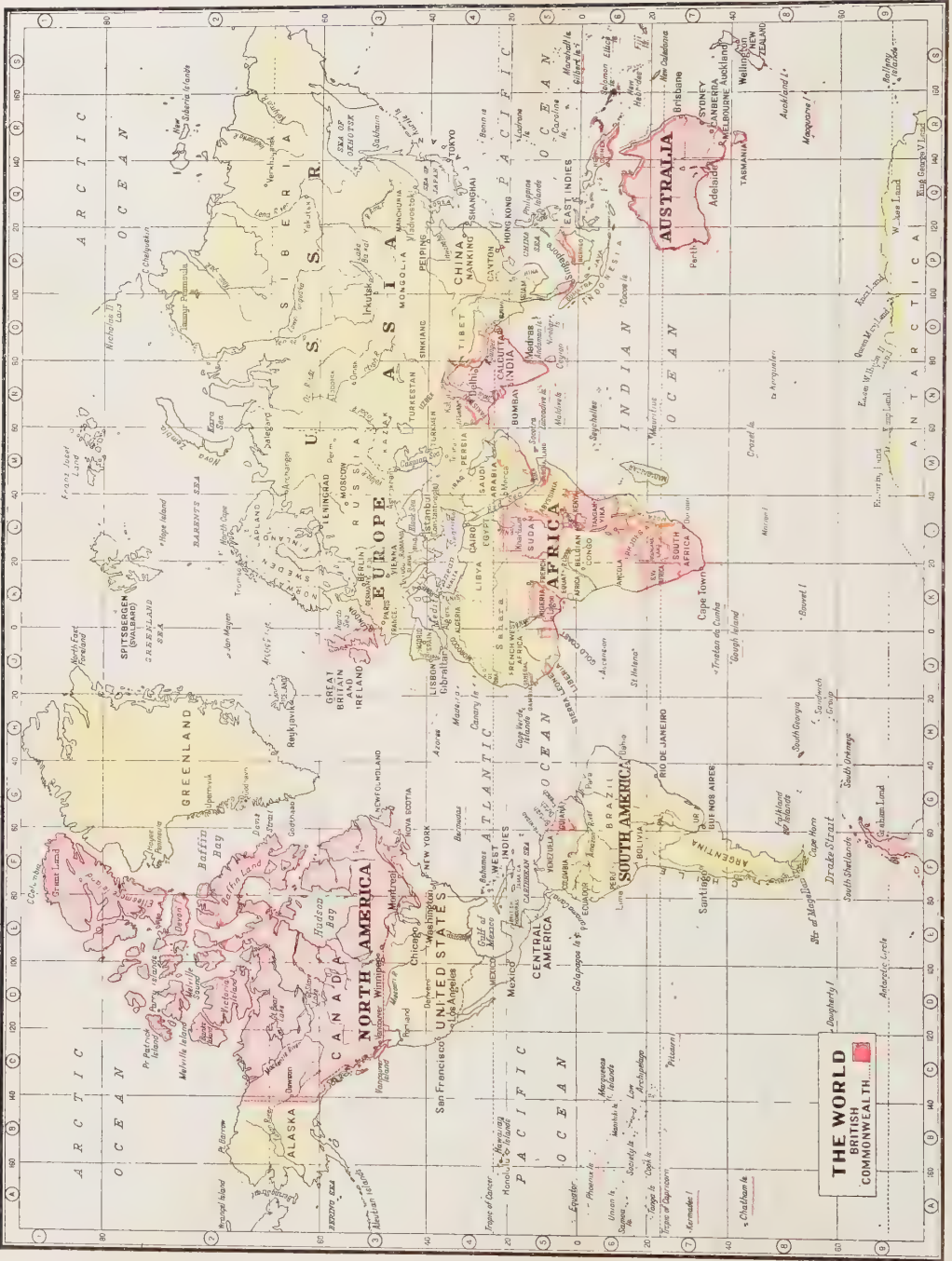
ARCTIC

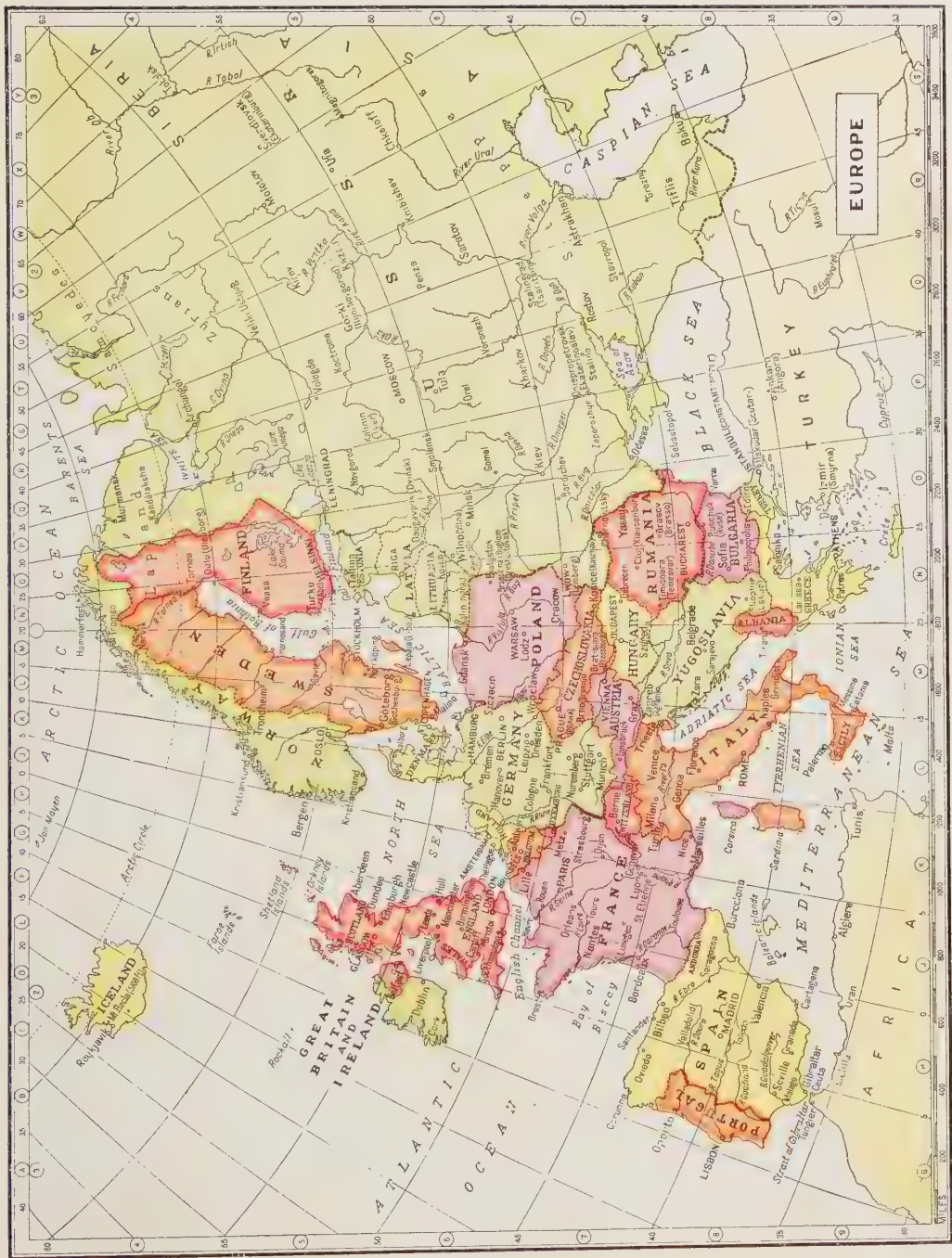
ANTARCTIC

PACIFIC OCEAN

AUSTRALIA

NEW ZEALAND









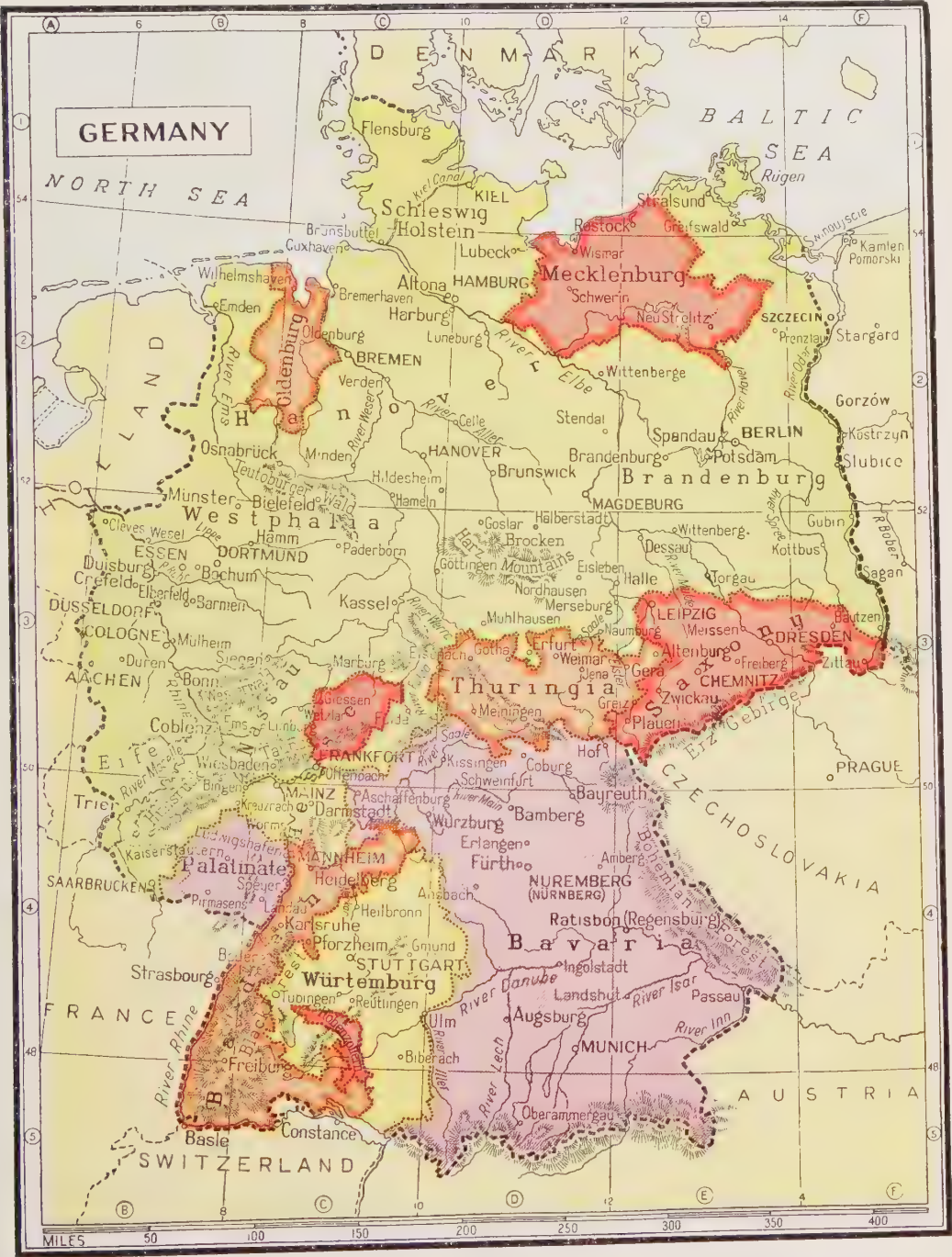






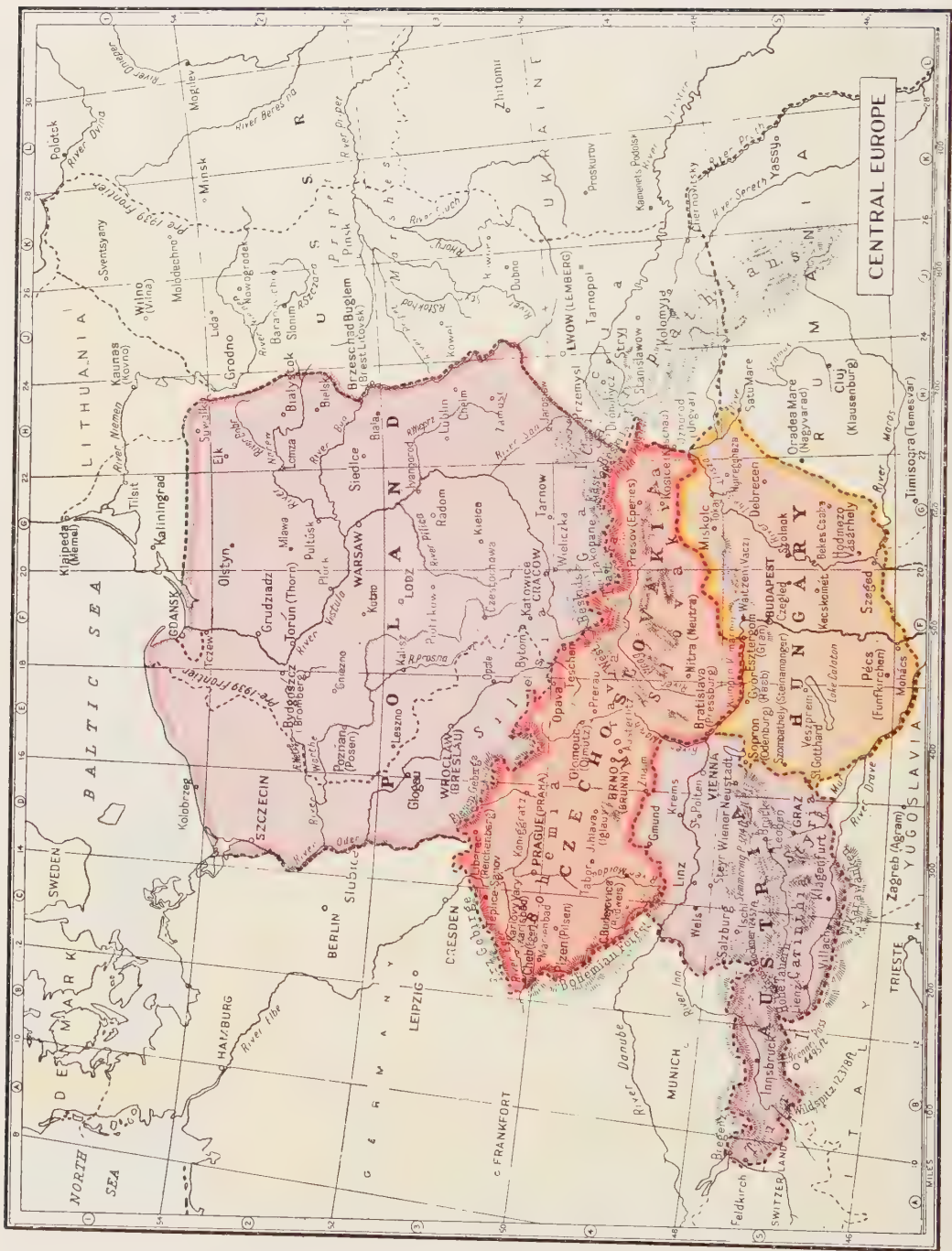








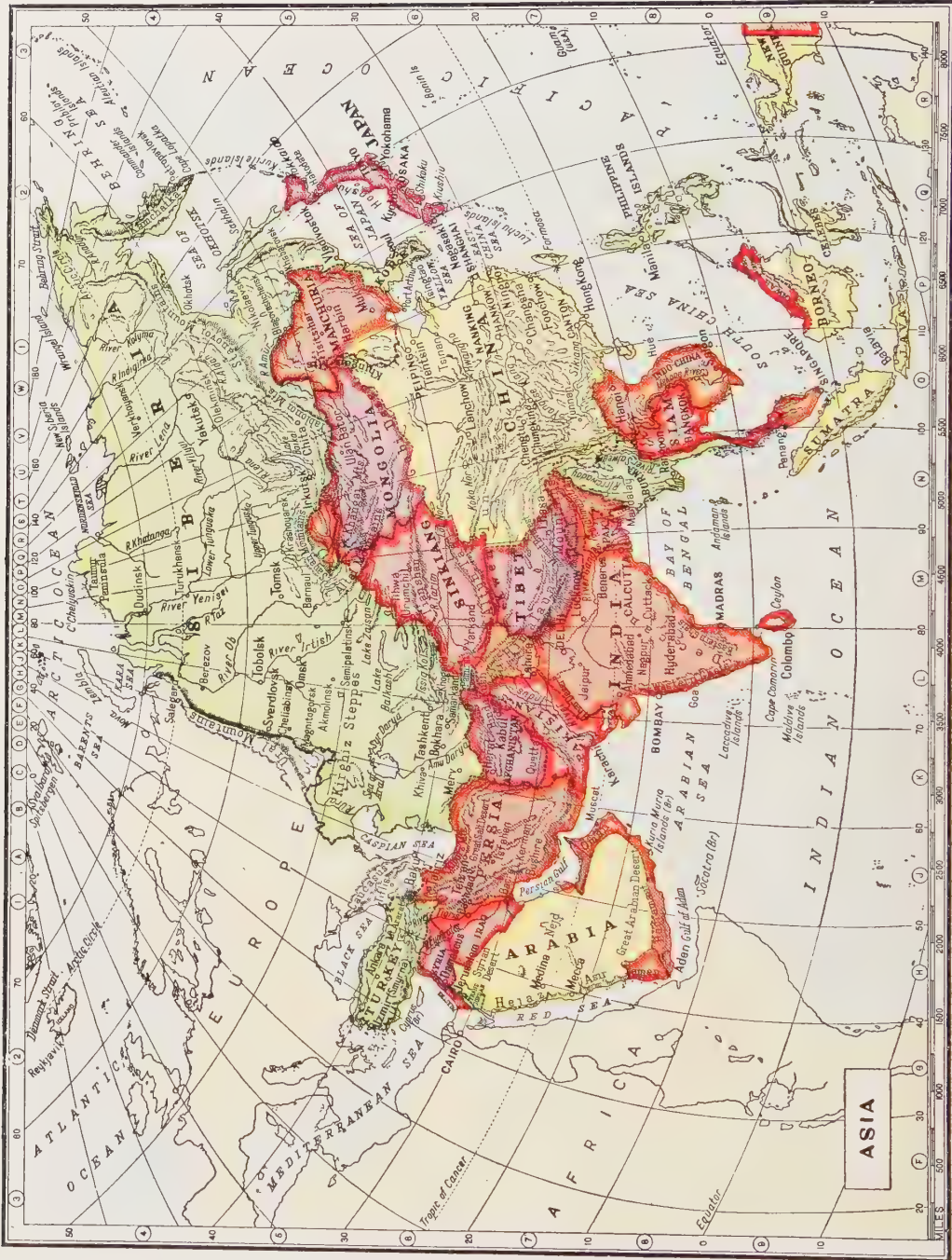


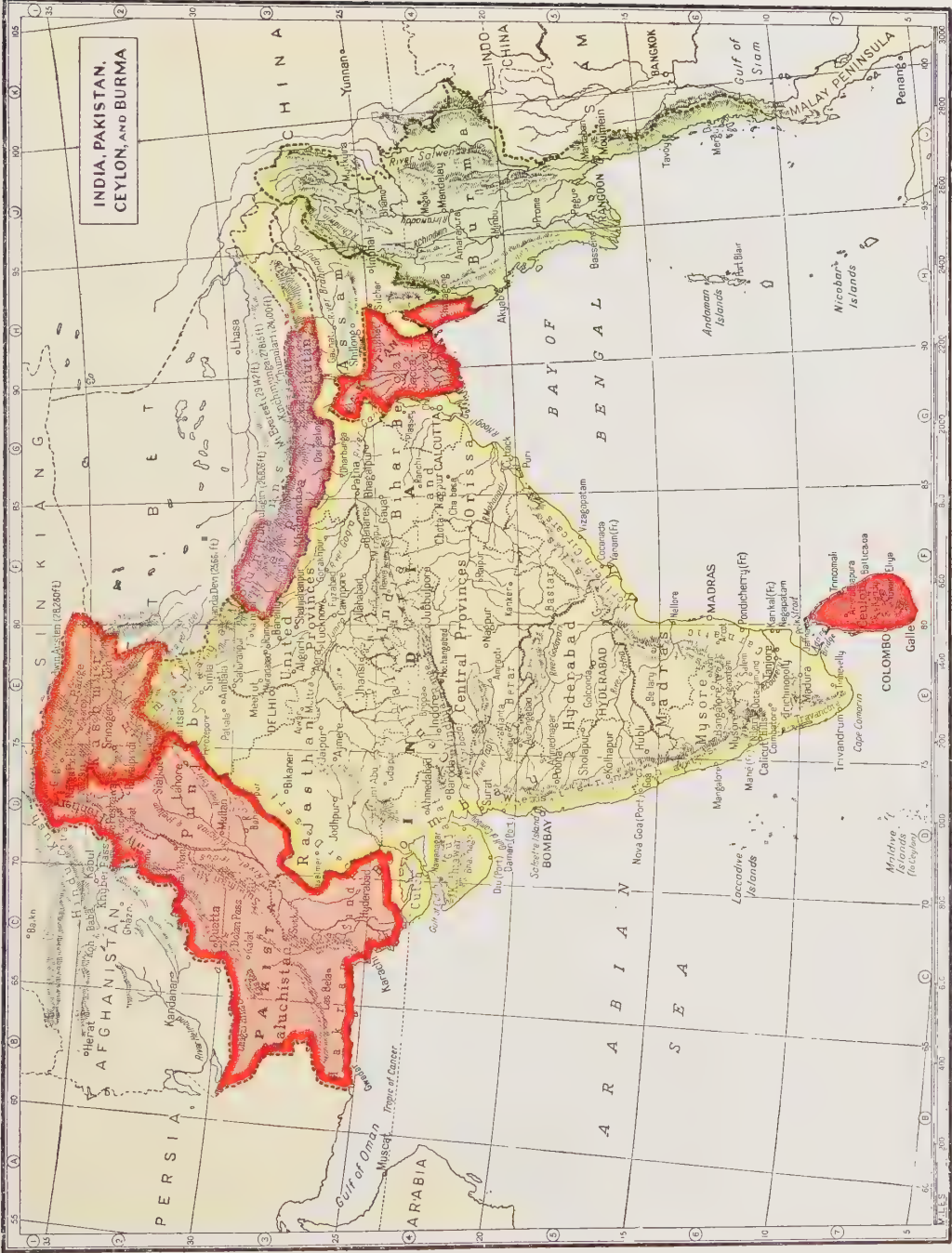


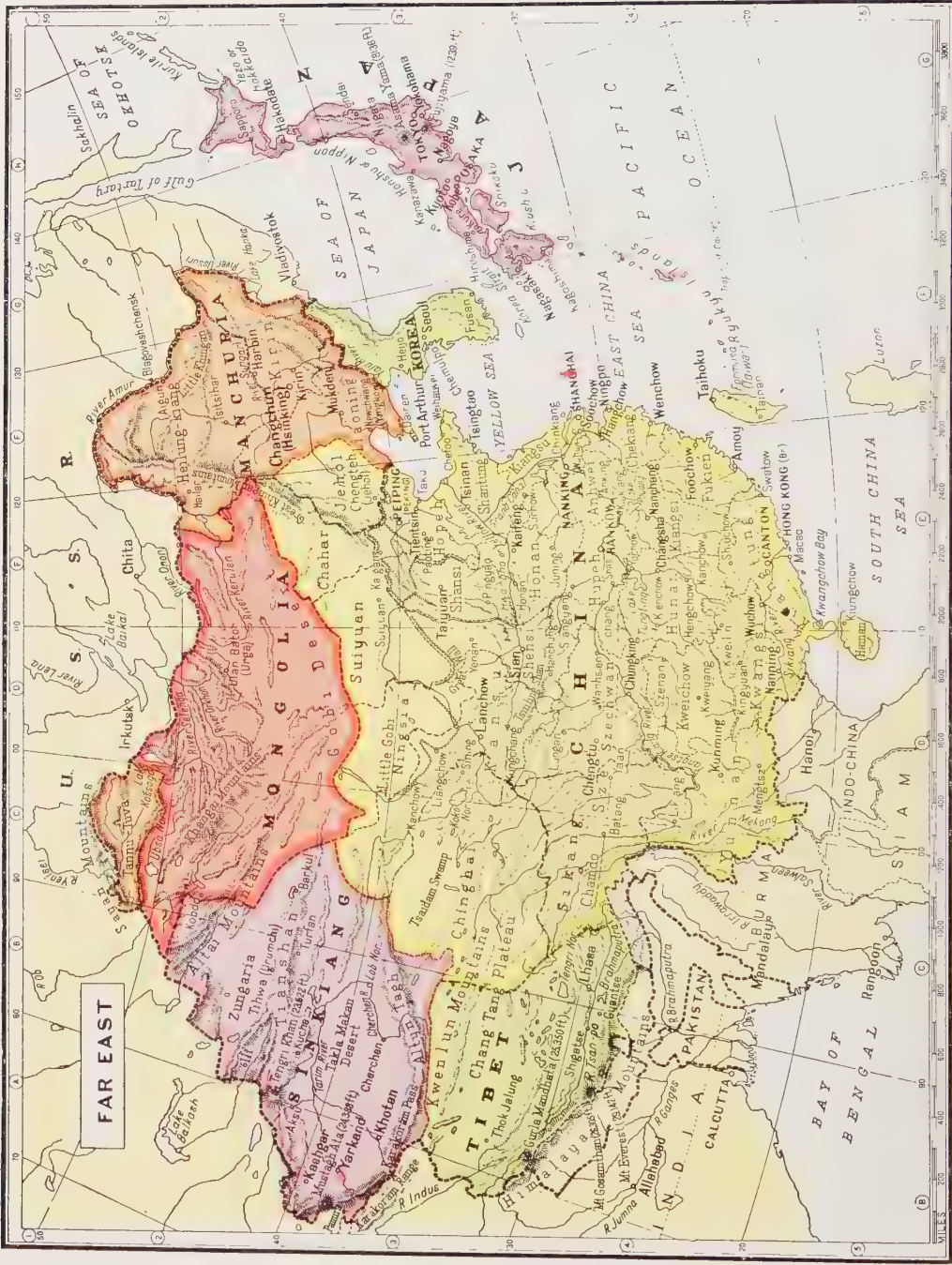




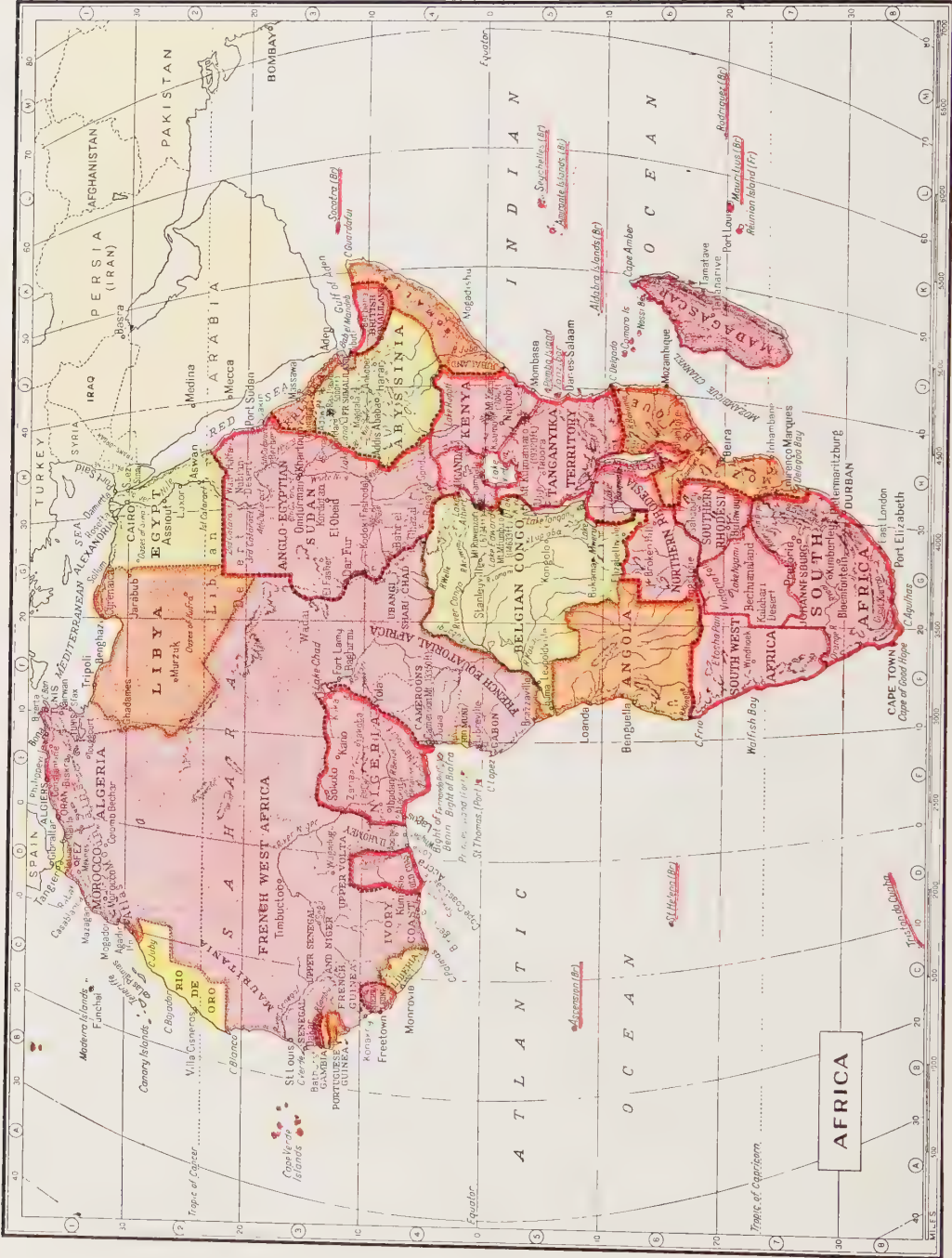










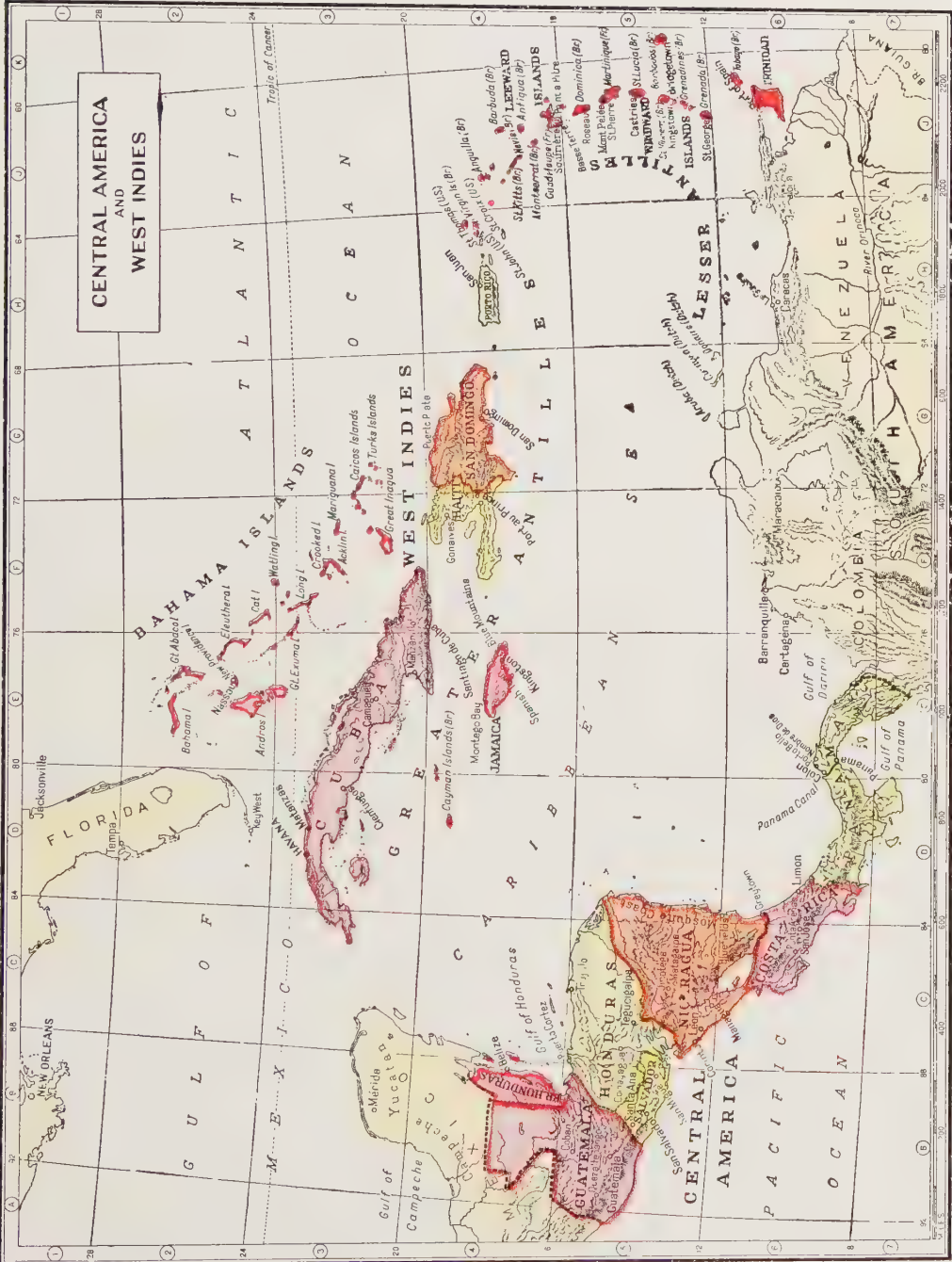




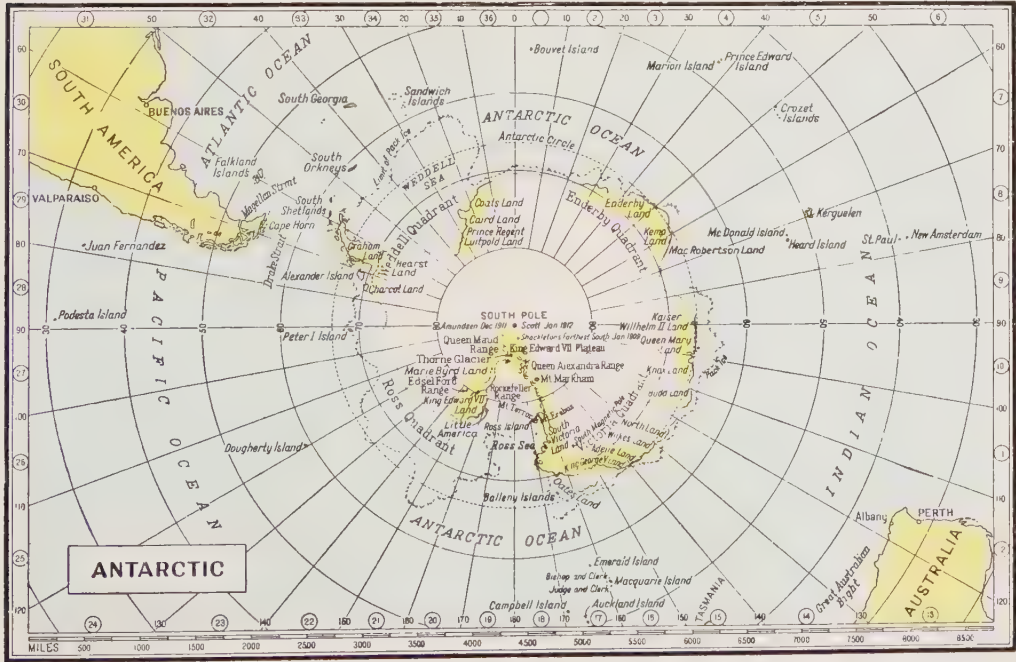
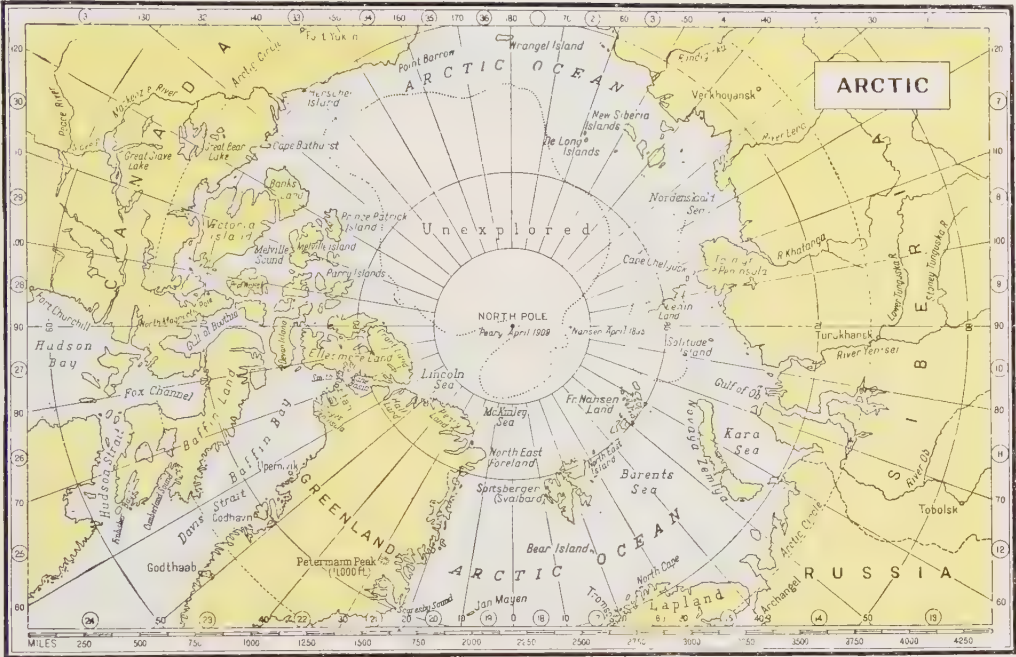


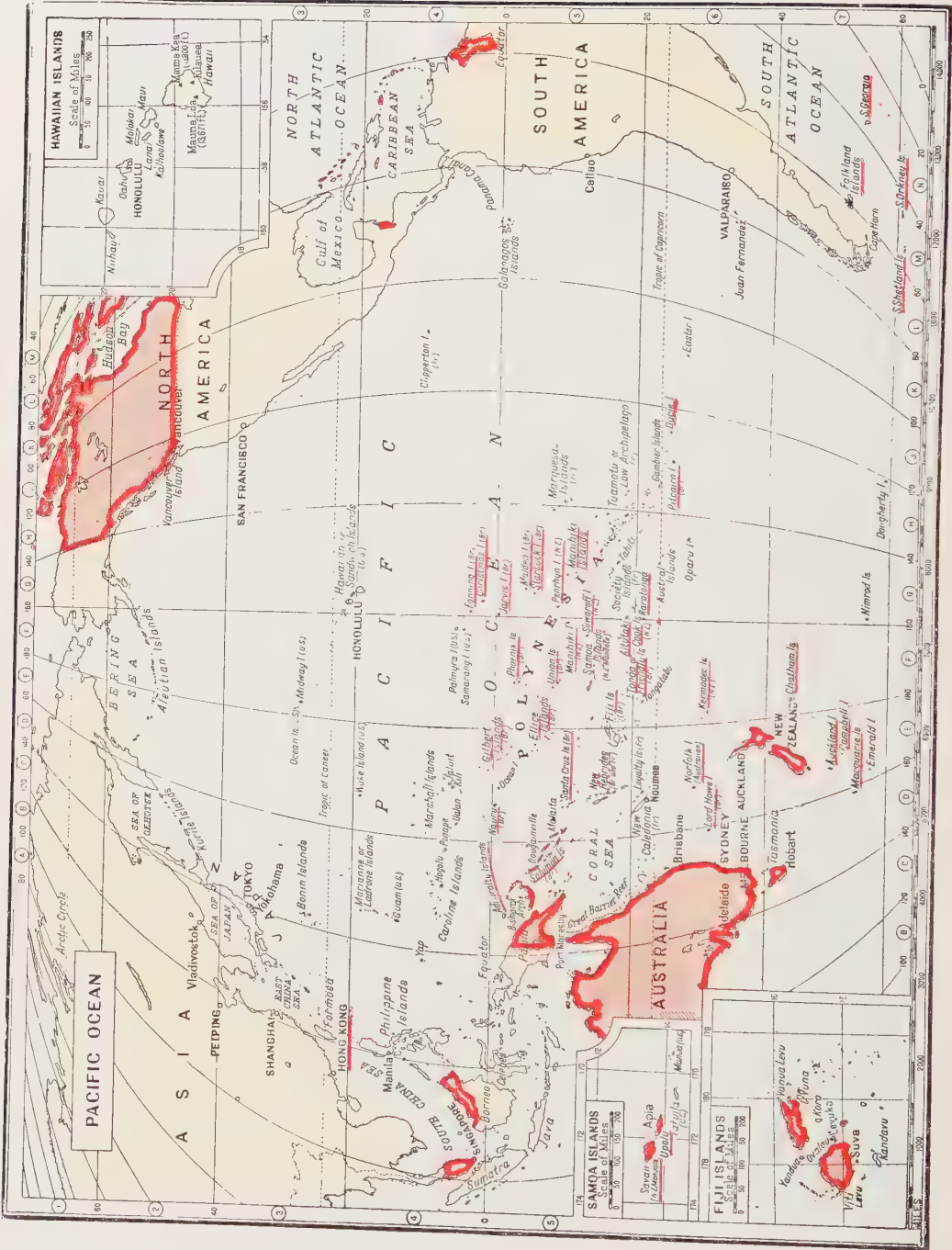


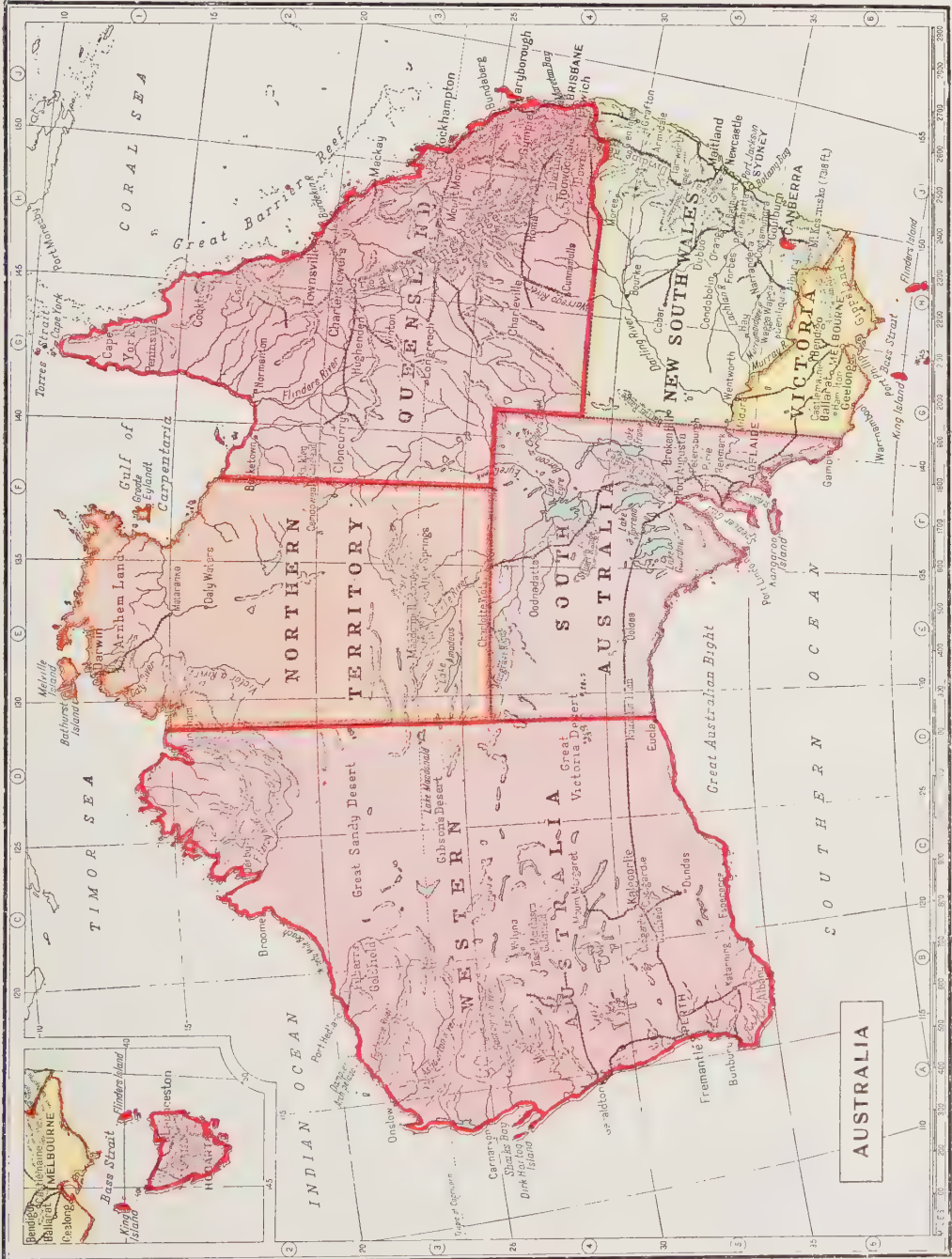














ATLAS OF ENGLAND



A Series of

Maps of Her 41 Counties

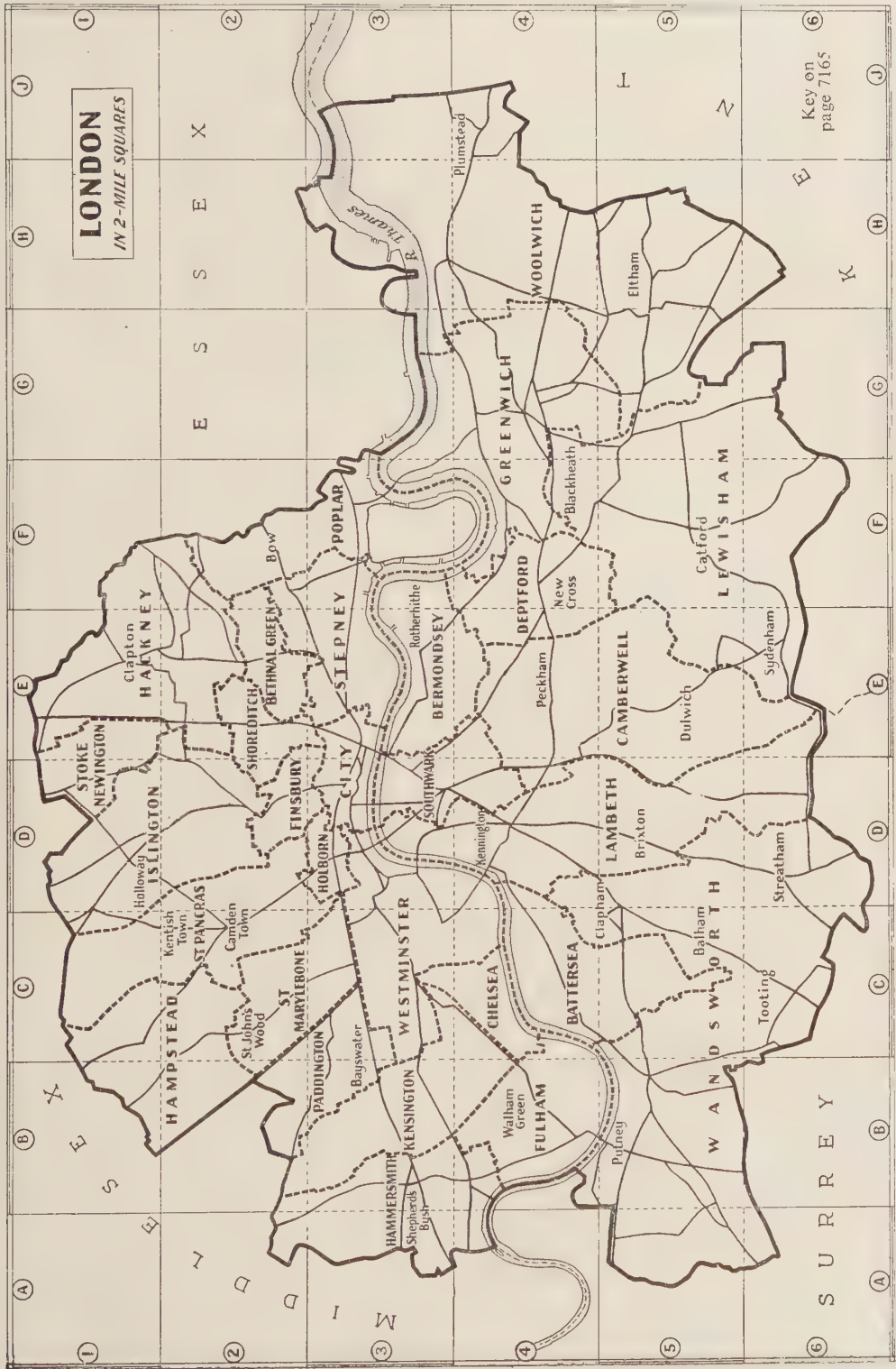
with

Key to Ten Thousand Places

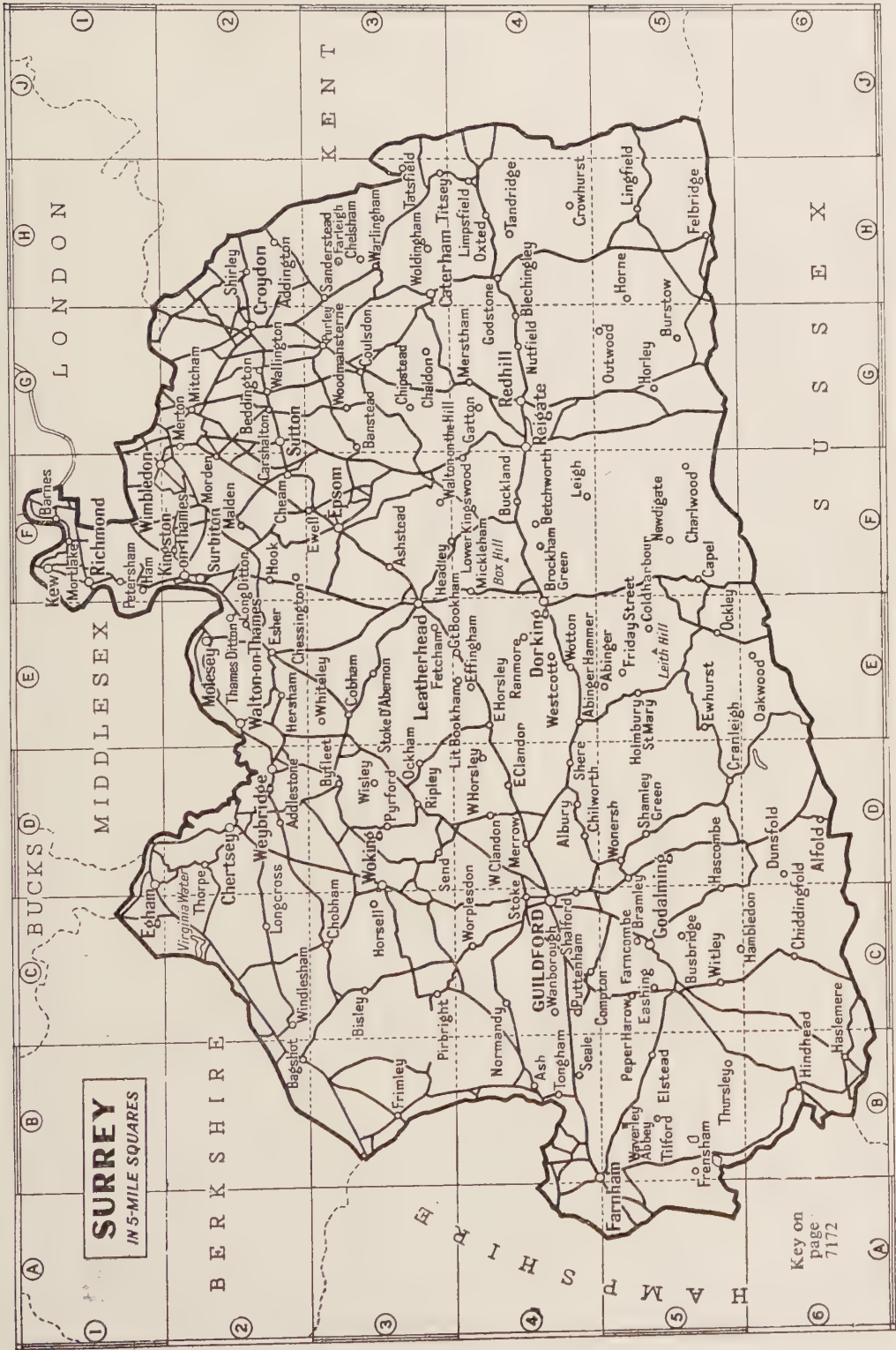
and

A Comprehensive List of
English Rivers











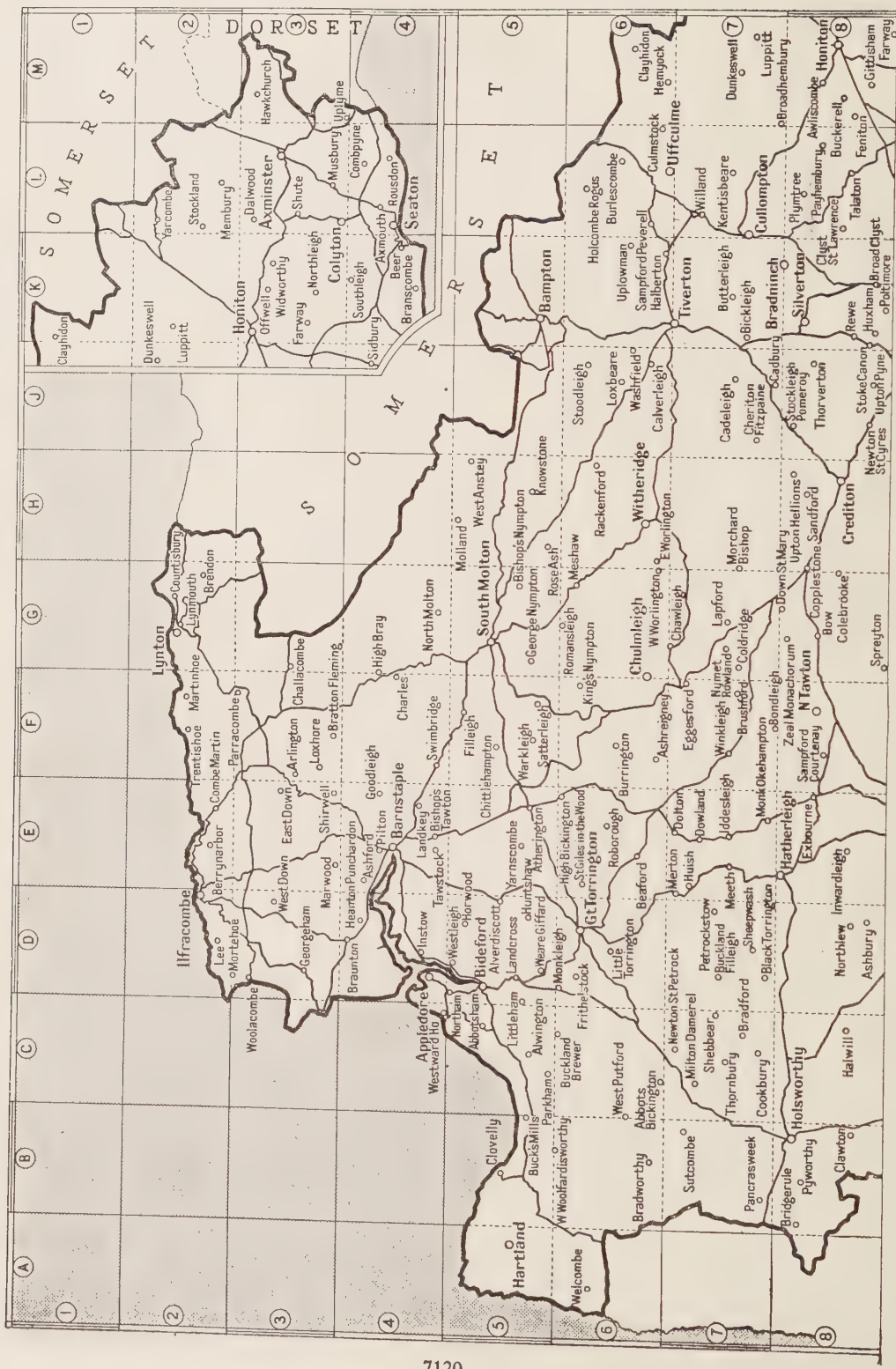


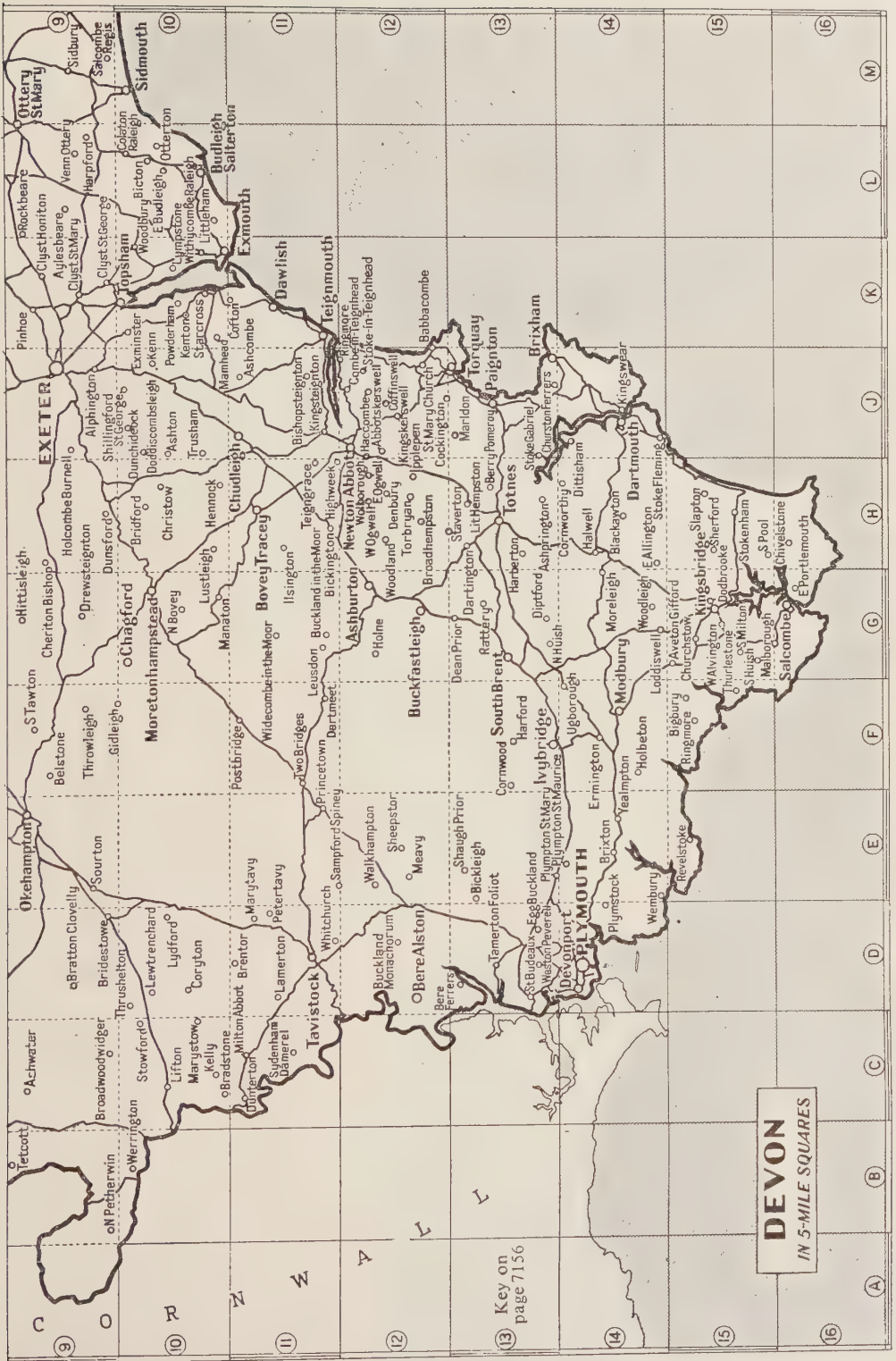














The key to this map
is on page 7159



THE CATHEDRAL AT GLOUCESTER,
COUNTY TOWN OF GLOUCESTER-
SHIRE



The key to this map is on page 7174

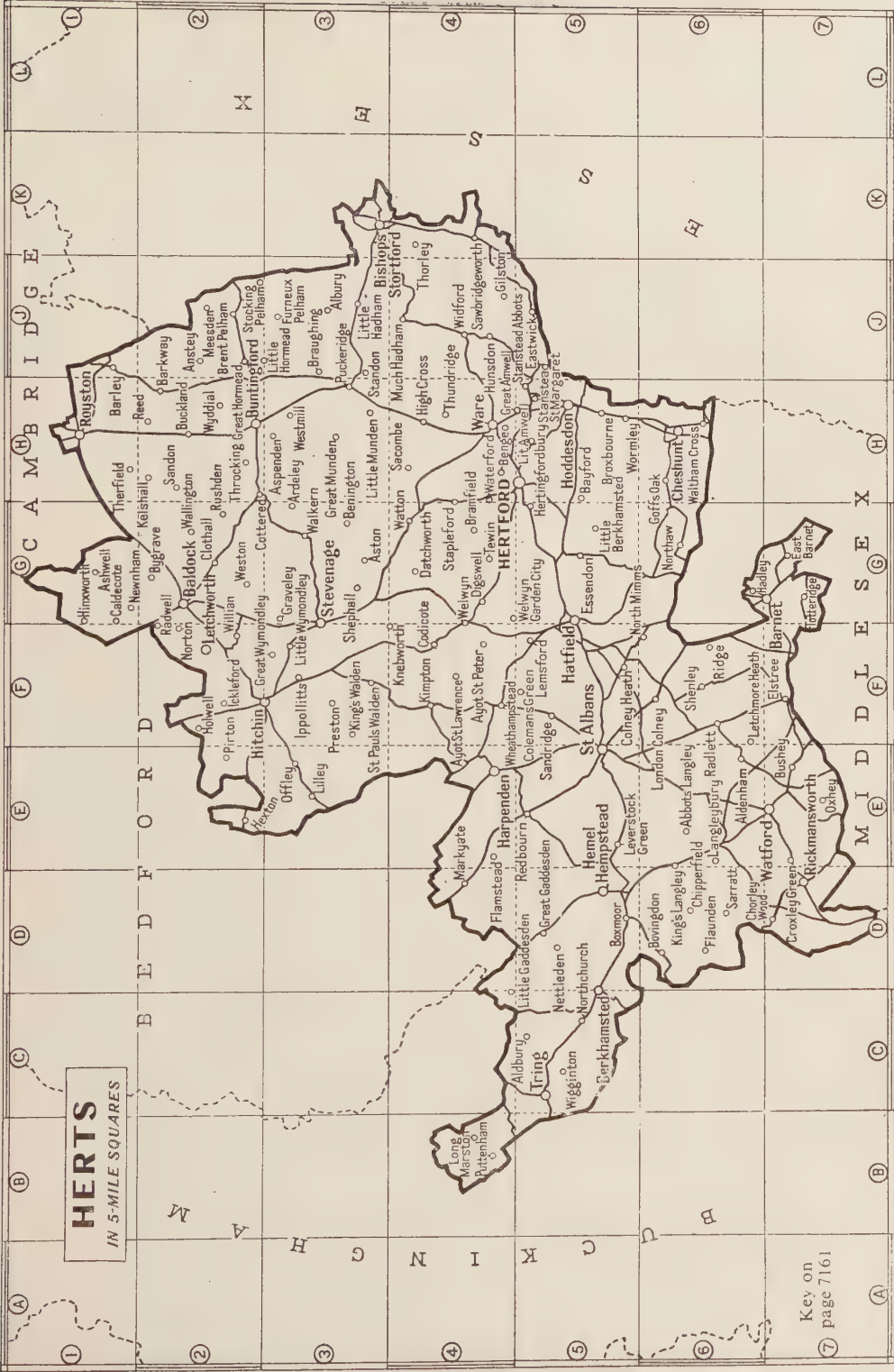


WORCESTER CATHEDRAL ON THE BANKS OF THE SEVERN























The key to this map is on page 7163



THE MUNICIPAL BUILDINGS AT LEICESTER

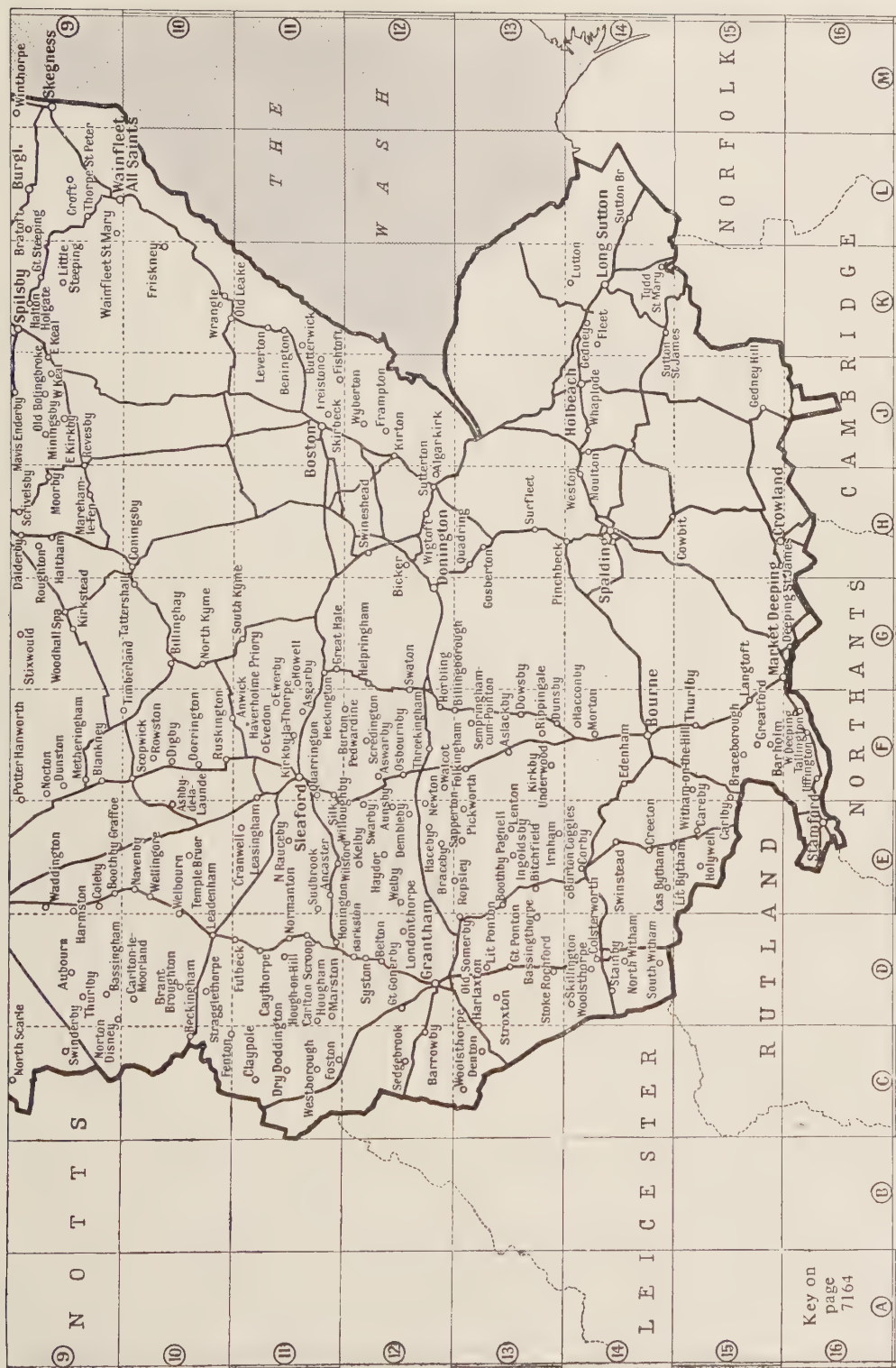


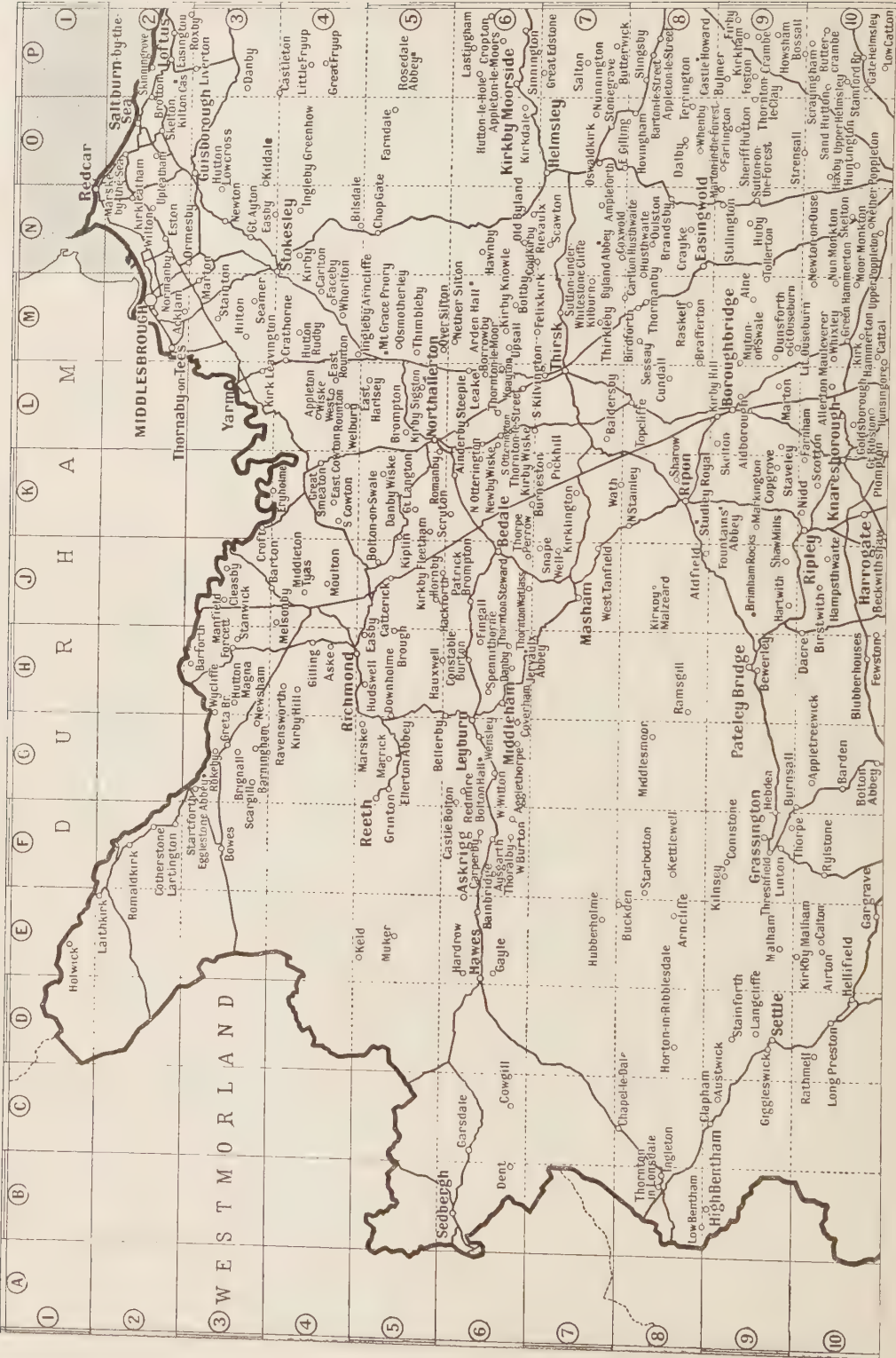
The key to this map is on page 7161

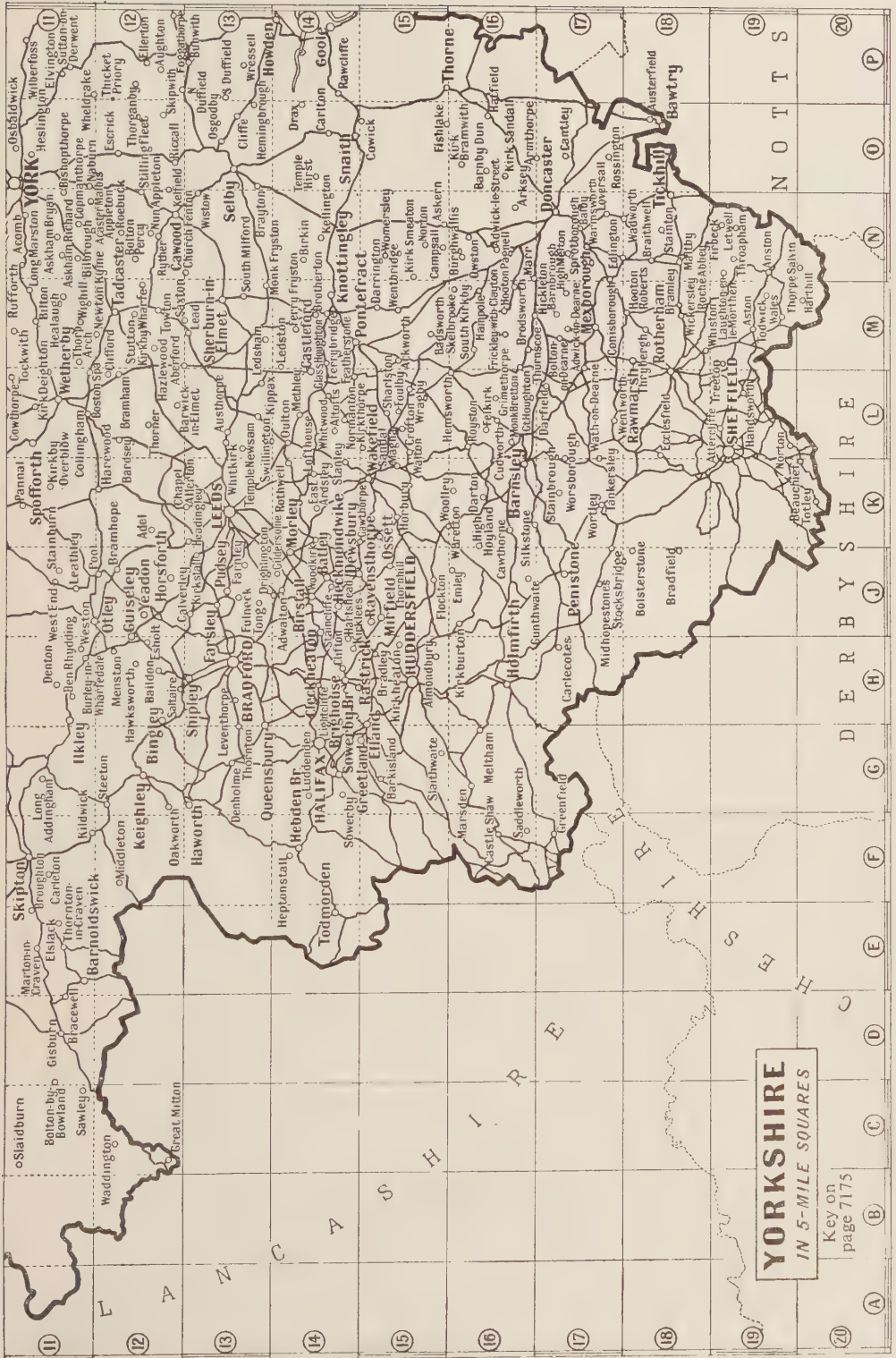


THE MARKET-PLACE AND ALL SAINTS CHURCH AT HUNTINGDON

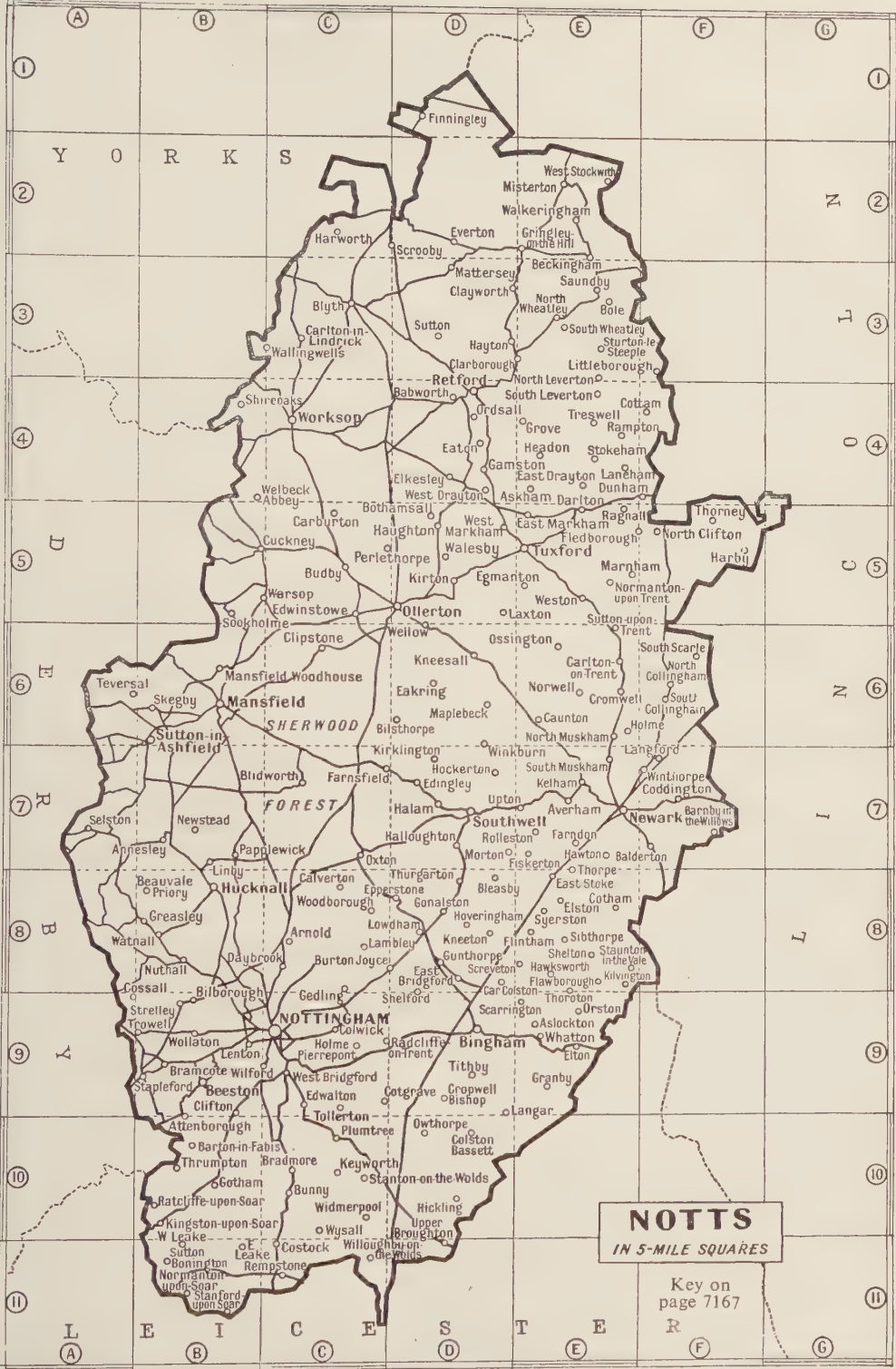








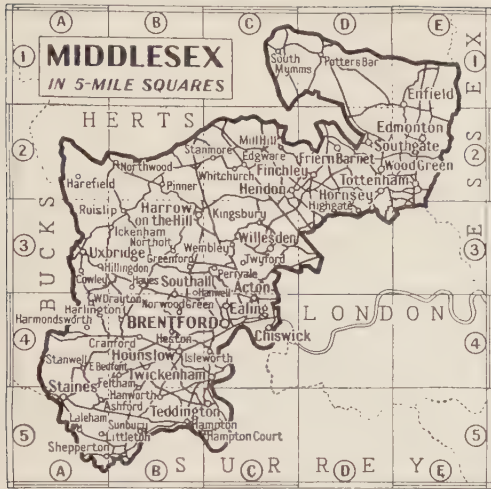












Key on page 7165

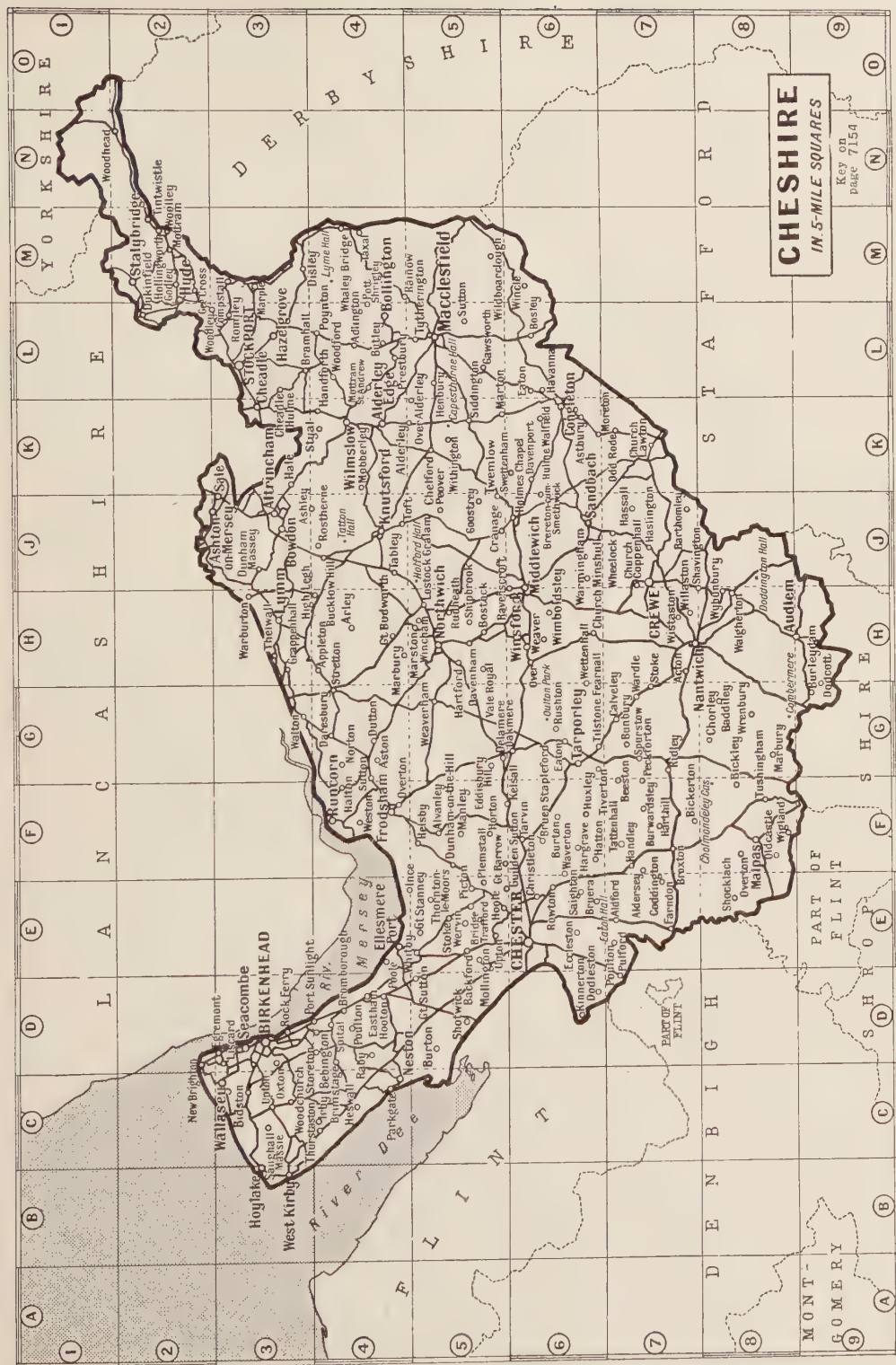


Key on page 7168



Key on page 7173











The key to this map is on page 7169



ENGLISH BRIDGE ACROSS THE SEVERN AT SHREWSBURY



The key to this map
is on page 7161



WYE BRIDGE AND
THE CATHEDRAL AT
HEREFORD



THE 13TH-CENTURY
GATEWAY ON THE
MONNOW BRIDGE
AT MONMOUTH

The key to this map
is on page 7165

GUIDE TO 10,000 PLACES

In the following pages are the names of about 10,000 villages and towns of England which are shown in the maps appearing on pages 7110 to 7152. The counties are given here in alphabetical order and the letter and figure against each place indicate the square in which it will be found on the map. A village with a name like East Claydon should be looked for under the first word. Where two or more places of the same name appear, the name of a neighbouring village or town is given to make identification easy.

BEDFORDSHIRE—KEY TO THE MAP ON PAGE 7130

Ampthill B5	Dean B1	Houghton Regis B7	Oakley B3	Stevington B3
Arlesey D5	Dunstable B7	Husborne-Crawley A5	Odell A2	Stopsley C7
Aspley Guise C6	Dunton E4	Hyde C8	Old Warden D4	Stotford E5
Barton A5	Eaton Bray B7	Jackwell Green D4	Pavenham B3	Streatley C6
Battlesden A6	Eaton Socon D2		Pertenhall C2	Studham B8
Bedford C4	Edworth E5	Kempston B4	Podington A2	Sundon C6
Biddenham B4	Elstow C4	Kensworth B7	Potsgrove A6	Sutton E4
Biggleswade D4	Eversholt B6	Keysoe C2	Potton E4	Swineshead C1
Billington A7	Everton D3	Knotting B2	Pulloxhill C5	Tempsford D3
Bletsoe D3	Eyworth E4	Langford D5	Ravensden C3	Thurleigh C2
Bolnhurst C2	Felmersham B2	Leighton C5	Renhold B5	Tilsworth B7
Bromham B3	Flitton C5	Buzzard A7	Ridgmont C3	Tingrith B6
Caddington C7	Goldington C3	Lidlington B5	Riseley B2	Toddington B6
Campton D5	Gravenhurst C3	Little Barford D3	Roxton D3	Totternhoe B7
Cardington C4	Great Barford C5	Little Staughton C2	Salford C7	Turvey A3
Carlton A3		Luton C3	Sandy A5	Westoning B6
Chalgrave B6	Harlington B6	Marston B5	Sharnbrook B2	Whipsnade B8
Chellington C5	Harrold A3	Moretaine B5	Sharpenhoe C6	Wilden C3
Chicksands Priory C5	Haynes C5	Maulden C5	Shefford D5	Willington C3
Clapham B3	Henlow D5	Melchbourne B2	Shelton B1	Wishamstead C4
Clifton D5	Higham Gobion C6	Meppershall D5	Shillington C5	Woburn A6
Clophill C5	Hinwick A2	Millbrook B5	Silsoe C5	Wootton B4
Cockayne Hatley E3	Hockliffe B6	Milton Bryant B6	Southill D4	Wrestlingworth E4
Colmworth C2	Holcot A5	Milton Ernest B3	Stagsden B4	Wymington A2
Cople C4	Houghton C4	Northill D4	Stanbridge B7	Yelden B1
Cranfield A4	Conquest C4		Steppingly B5	

BERKSHIRE—KEY TO THE MAP ON PAGE 7112

Abingdon E2	Chilton E4	Hampstead F6	Padworth F12	Thatcham E6
Aldermaston F6	Cholsey F4	Marshall D6	Pangbourne F5	Theale G6
Aldworth E5	Clewer L5	Hampstead Norris E5	Peasemore D5	Three Mile Cross G6
Appleford E3	Cold Ash E6	Harwell E3	Purley G2	Tidmarsh G5
Appleton D2	Coleshill A3	Hatford C3	Pusey C5	Tilbury F5
Arborefield H6	Combe C7	Hinton Waldrist C2	Radley E2	Twyford H5
Ardington D3	Compton D3	Hungerford C6	Reading G5	
Ashampstead F5	Compton B4	Hurley J4	Remenham H4	Uffington B3
Ashbury B4	Beauchamp K4	Hurst H5	Ruscombe J5	Ufton Nervet F6
Aston Tirrold E4	Cookham J6	Inkpen C6	Sandhurst J7	Upton E4
Aston Upthorpe E4	Crowthorne J6		Shaw E6	
Avington C6	Cumnor D1	Kingston D2	Shellingford B3	Wallingford F3
Balking B3	Denchworth C3	Bagpuize D2	Shinfield H6	Waltham St. J5
Barkham H6	Didcot E3	Kingston Lisle C3	Shottesbrook C6	Wantage D4
Basildon F5	Donnington D6	Kintbury C6	Shrivenham C5	Warfield K5
Bear Wood H6	Drayton D3	Lambourn C5	Sonning H5	Wargrave H5
Beedon E5	Eastbury C5	Letcombe C4	South Hinksey E1	Wasing F6
Bessels Leigh D2	East Challow J6	Bassett C4	South Moreton F3	Welford D5
Binfield J6	East Garston C5	Letcombe Regis C4	Sparsholt D6	West Challow C3
Bisham J4	East Hagbourne E4	Little Coxwell B3	Speen F6	West Hanney D3
Blewbury D6	Easthampstead J6	Little Wittenham E3	Stanford Dingley F6	West Hendred D3
Boxford D6	East Hendred D3	Long Wittenham B3	Stanford-in-the-Vale C3	West Ilsley D4
Bracknell J6	East Ilsley D4	Longcot B3	Steventon D3	West Woodhay C7
Bradfield F5	East Lockinge D4	Lyford C3	Stratfield Mortimer G6	Whitcombe C5
Bray K4	East Shefford D5	Maidenhead K4	Streatley D2	White Waltham J5
Brightwalton F3	Eaton Hastings D6	Marcham D2	Sulham F4	Wickham C6
Brightwell E6	Enborne C2	Marlston E5	Sulham Abbots G6	Windsor L5
Brimpton C2	Englefield F5	Midgham B3	Sulhamstead G5	Winkfield K5
Buckland E6	Faringdon G6	Milton E3	Sulhamstead Bannister F6	Winterbourne D5
Bucklebury E6	Farnborough C4	Moulsford F4	Sunningdale E1	Wokingham J6
Burghfield G6	Finchamstead J7	Newbury D2	Sunninghill E2	Woolhampton F6
Buscot A2	Frilsham H5	North Hinksey F3	Sunningwell E3	Wootton B4
Catmore D4	Fyfield D5	North Moreton L5	Sutton Courtenay E2	Wytham D1
Caversham H5	Goosey C3	Old Windsor C5	Swallowfield H6	Yattendon E5
Chaddleworth D5	Great Coxwell C3			
Charney Bassett C5	Great Shefford C5			
Chieveley D5				
Childrey C4				

BUCKINGHAMSHIRE—KEY TO THE MAP ON PAGE 7125

Addington C4	Biddlesden B3	Calverton D3	Coleshill F8	East Claydon C4
Adstock C4	Bierton D6	Castlethorpe D2	Colnbrook G11	Edgcott B5
Akeley C3	Bledlow D8	Chalfont St. Giles F9	Cuddington C6	Edlesborough F5
Amersham F8	Bletchley E8	Chalfont St. Peter F9	Datchet F11	Ellesborough D7
Asendon C6	Boarstall B6	Chearsley C6	Denham G9	Emberton E1
Ashley Green F7	Boveney F11	Cheddington E5	Dinton C6	Eton F11
Aston Abbots D5	Bow Brickhill E3	Chenies F8	Dorney F8	
Aston Clinton E6	Bradenham D8	Chesham F8	Dorton F8	Farnham Royal F10
Aston Sandford C7	Bradwell B3	Chesham Bois F8	Drayton B6	Fawley C9
Astwood F2	Brill D6	Chetwode B4	Drayton F8	Fenny Stratford E3
Aylesbury D6	Broughton E3	Chicheley E2	Drayton Parslow E6	Fingest D9
Barton Hartshorn B4	Buckingham E3	Chilton B6	Drayton Parslow E6	Fleet Marston C6
Beachampton C3	Buckland E6	Cholesbury E7	Dropmore E1	Foscott C3
Beaconsfield F9	Burnham E10	Clifton Keynes E1	Dunton E1	Fulmer F10

Gawcott	B4	Hughenden	E8	Maids Moreton	B3	Quainton	C5	Thornton	C3
Gayhurst	D2	Hulcott	D6	Marlow	D9	Quarrendon	D6	Tingewick	B4
Gerrard's Cross	F9	Ibstone	C9	Marsh Gibbon	B5			Turville	C9
Granborough	C5	Ickford	B7	Marsworth	E6	Raddicle	B3	Turweston	A3
Great Brickhill	E4	Ilmer	C7	Medmenham	D10	Radnage	D8	Twyford	B4
Great Hampden	D7	Iver	G10	Mentmore	E5	Ravenstone	D1	Tyler's Green	E9
Great Horwood	C4	Ivinghoe	F6	Middle Claydon	C4	Saint Leonards	E7	Tyringham	D2
Great Kimble	D7	Jordans	F9	Milton Keynes	E3	Saunderton	D7	Upper	
Great Linford	D2			Monks Risborough	D7	Shabbington	B7	Winchendon	C6
Great Missenden	E8	Lane End	D9	Moulsoe	E2	Shalstone	B3	Waddesdon	C6
Grendon		Langley		Mursley	D4	Shenley	D3	Walton	E3
Underwood	B5	Marish	F10			Sherington	E2	Water Stratford	B3
Grove	E5	Lathbury	E2	Nether	C6	Simpson	E3	Wavendon	E3
		Latimer	F8	Newport Pagnell	E2	Slapton	E5	Wendover	A7
Haddenham	C7	Lavendon	E1	Newton		Slough	F10	Westbury	E3
Halton	D9	Leckhamstead	C3	Blossomville	E1	Soulbury	E4	Weston Turville	D6
Hambleden	D2	Lee	E7	Newton Longville	D4	Stantonbury	D2	Weston Underwood	E1
Hanslope	D2	Lillingsstone	B3	North Crawley	E2	Steeple Claydon	B4	West Wycombe	D8
Hardmead	D5	Lillingsstone Lovell	E5	North Marston	C5	Stewley	D4	Wexham	F10
Hardwick	D6	Linslade	E4			Stoke Goldington	D1	Whaddon	D3
Hartwell	D2	Little Brickhill	E4	Oakley	B6	Stoke Hammond	E4	Whitchurch	D5
Haversham	D6	Little Hampden	E7	Olney	E1	Stoke Mandeville	D6	Willen	E5
Hawridge	F7	Little Horwood	D4	Oving	C5	Stoke Poges	F10	Wingrave	E5
Hazlemere	E8	Little Kimble	D7			Stokenchurch	C8	Winslow	C4
Hedgerley	F9	Little Linford	D2	Padbury	C4	Stone	D6	Wolverton	D3
Hedso	E10	Little Marlow	E9	Penn	E9	Stony Stratford	D3	Woburn	E9
High Wycombe	B9	Little Missenden	E8	Penn Street	C5	Stowe	B3	Wotton Underwood	B6
Hillesden	B4	Little Woolstone	E3	Pitchcott	E8	Swanbourne	D4	Worminghall	B7
Hitcham	E10	Long Grendon	B7	Pitstone	F6			Woughton-on-the-	
Hoggeston	D5	Loudwater	E9	Preston Bissett	B4	Taplow	E10	Green	E3
Horsenden	D7	Loughton	D3	Prestwood	E8	Tattenhoe	D3	Wraysbury	F11
Horton	F11	Ludgershall	B6	Princes Risborough	D7	Thornborough	C3		

CAMBRIDGESHIRE—KEY TO THE MAP ON PAGE 7131

Abington Pigotts	B10	Croydon	B9	Hauxton	D9	Long Stowe	B9	Swaffham Bulbeck	E8
Arrington	B9	Doddington	C4	Heydon	D10	Madingley	C8	Swaffham Prior	E8
Babraham	E9	Dry Drayton	C8	Hildersham	E9	March	D4	Swavesey	C7
Balsham	F9	Dullingham	F8	Hinxton	E10	Melbourn	C10	Tadlow	B10
Barrington	C9	Duxford	D10	Histon	D8	Meldreth	C10	Teversham	E8
Bartlow	F10	East Hatley	B9	Horningsea	E8	Mepal	D8	Thetford	E6
Barton	C9	Elm	D2	Horseheath	F10	Milton	D8	Thorney	B3
Bassingbourn	C10	Elsworth	B8	ICKLETON	D10	Newton	D9	Thriplow	D10
Borough Green	F9	Eltisley	B8	Impington	D8	Newton-in-	D2	Toft	C9
Bottisham	E8	Ely	E6	Isleham	F6	the-Isle		Trumpington	D9
Bourn	B8	Fen Ditton	C8	Kennett	G7	Oakington	C8	Tydd St. Giles	D1
Boxworth	C8	Fen Drayton	C7	Kingston	C9	Orwell	C9	Walsoken	D2
Brinkley	F9	Fordham	F7	Kirtling	G8	Over	C7	Waterbeach	E7
Burwell	F7	Fowlmere	D10	Knapwell	C8			Wendy	B10
Caldecote	C8	Foxton	E9	Landbeach	D7	Pampisford	E9	Westworth	D6
Cambridge	D8	Fulbourn	E9	Landwade	F7	Parson Drove	C2	Westley Waterless	F8
Carlton	F9	Gamlangay	A9	Leverington	D2	Rampton	D7	Weston Colville	F9
Castle Camps	F10	Girton	D8	Linton	E10	Reach	E7	West Wrating	F9
Caxton	B8	Grantchester	D9	Litlington	B10	Sawston	D9	Whaddon	C10
Chatteris	C5	Great Abington	E9	Little Abington	E9	Shepreth	C10	Whittlesey	B4
Cherry Hinton	D8	Great Chishall	D11	Little Chishall	D11	Shingay	B10	Whittleford	D9
Chettisham	E5	Great Eversden	C9	Little Downham	E5	Shudy Camps	F10	Wicken	E7
Cheveley	G8	Great Shefford	D9	Little Eversden	C9	Snailwell	F7	Wilburton	D6
Chippenhams	F7	Great Wilbraham	E8	Little Gransden	B9	Soham	F6	Willingham	C7
Comberton	C8	Guilden Morden	B10	Littleport	E5	Stapleford	D9	Wimpole	C9
Conington	E7	Haddenham	D6	Little Shelford	D9	Stetchworth	F8	Wisbech	D2
Coton	D7	Harlton	C9	Little Wilbraham	E8	Stow-cum-Quy	D2	Wisbech St Mary	D2
Cottenham	D7	Harston	D9	Lode	E8	Stretham	E6	Witcham	D6
Coveney	D5	Haslingfield	C9	Lolworth	C8	Stunney	E6	Witchford	E6
Croxton	B8	Hatley St George	B9	Long Stanton	C7	Sutton	D6	Wood Ditton	F8

CHESHIRE—KEY TO THE MAP ON PAGE 7147

A	cton	H7	Brereton-cum-	Coddington	E7	Gawsworth	L5	Hoole	E5	
	Adlington	L4	Smethwick	J6	Combermere	G8	Gee Cross	M2	Hooton	D4
	Alderley	K4	Bridge Trafford	E5	Compstall	M3	Godley	M2	Horton	F5
	Alderley Edge	K4	Brimstage	D4	Congleton	K6	Goostrey	J5	Hoylake	B3
	Aldersey	E7	Bromborough	D4	Cranage	J5	Grappenhall	H3	Hulme Walfield	K6
	Aldford	E7	Broxton	F7	Crewe	H7	Great Barrow	F5	Huxley	F6
	Altrincham	J3	Bruen Stapleford	F6	Daresbury	G4	Great Budworth	H4	Hyde	M2
	Alvanley	F5	Bruera	E6	Davenham	H5	Great Stanney	E5	Ince	E4
	Appleton	H4	Bucklow Hill	J4	Davenport	K6	Great Sutton	D5	Irby	C4
	Arley	H4	Bunbury	G7	Delamere	G5	Guilden Sutton	E6	Kelsall	F6
	Ashley	J3	Burleydam	G9	Disley	M3	Hale	K3	Kinnerton	D6
	Ashton-on-Mersey	J3	Burwardsley	F7	Dodcott	G9	Halton	F4	Knutsford	J4
	Astbury	K6	Burton	F6	Doddington Hall	J8	Handforth	L4	Liscard	D3
	Aston	G4	Burton (Wirral)	D5	Dodleston	D6	Handley	F7	Lostock Gralam	H5
	Audlem	H8	Butley	L4	Dukinfield	L2	Hargrave	F6	Lyme Hall	M4
					Dunham Massey	J3	Harthill	H5	Lymm	H3
B	ackford	E5	Calveley	G7	Dunham-on-the-		Harthill	F7	Macclesfield	L5
	Baddiley	G8	Capesthorne	K5	Hill	F5	Haslington	J7	Malpas	F8
	Barthomley	J7			Dutton	G4	Hassall	J7	Manley	F5
	Bebington	D4	Cheadle	K3	Eastham	D4	Hatton	F6	Marbury	G8
	Beeston	F7	Cheadle Hulme	L3	Eaton	G6	Havanna	L6	Marbury	G8
	Bickerton	F7	Chelford	K5	Eaton (Congleton)	L6	Hazelgrove	L3	(Northwich)	H4
	Bickleigh	F8	Chester	E6	Eaton Hall		Helsby	F5	Marple	M3
	Bidston	C3	Cholmondeley	F8	Eccleston	G8	Henbury	L5	Marston	H5
	Birkenhead	D3	Castle		Eddisbury Hill	E6	Heswall	C4	Marton	K5
	Bollington	L4	Chorley	G8	Egremont	D3	High Legh	H3	Middlewich	J6
	Bosley	L6	Christleton	E6	Ellesmere Port	E4	Holford Hall	J5	Mobberley	K4
	Bostock	H5	Church Coppenhall	J7	Farnon	E7	Hollingworth	M2	Mollington	E5
	Bowdon	J3	Church Lawton	K7	Frodsham	F4	Holmes Chapel	J6	Moreton	K7
	Bramhall	L3	Church Minshull	H6						

Cheshire

Mottram	M2	Pott Shrigley
Mottram St Andrew	L4	Poulton
Nantwich	H8	Poulton (Wirral)
Neston	C4	Poynton
New Brighton	D2	Prestbury
Northwich	H5	Pulford
Norton	G4	Raby
Oakmere	G6	Rainow
Odd Rode	K7	Ravenscroft
Oldcastle	F8	Ridley
Oulton Park	G6	Rock Ferry
Over	H6	Romiley
Over Alderley	K5	Rostherne
Overton	F8	Rowton
Overton (Frodsham)	F4	Rudheath
Oxton	D3	Runcorn
Parkgate	C4	Rushton
Peckforton	G7	Saighton
Peover	J5	Sale
Picton	E5	Sandbach
Plemstall	E5	Saughall Massie
Poole	E4	Seacombe
Port Sunlight	D3	Shavington

GUIDE TO 10,000 PLACES

Cumberland

M4	Shipbrook	H5	Thornton-le-Moors	E5	West Kirby	B3
E7	Shocklach	E8	Thurstaston	C3	Weston	F4
D4	Shotwick	D5	Tilstone Fearnall	G6	Wettenhall	H6
L4	Siddington	K5	Tintwistle	M2	Whaley Bridge	M4
L4	Spital	D4	Tiverton	G6	Wheelock	J7
D7	Spurstow	G7	Toft	J4	Whitby	E5
D4	Stalybridge	M2	Tushingham	F8	Wigland	F8
M5	Stockport	L3	Tytherington	L5	Wildboarclough	M5
H5	Stoke	E5	Twemlow	K5	Willaston	H7
G7	Stoke (Nantwich)	H7	Upton	C3	Wilmslow	K4
D3	Storeton	D3	Upton (Chester)	E5	Wimboldsley	H6
L3	Stretton	H4	Vale Royal	H5	Wincham	H5
J4	Styal	K4	Walgherton	H8	Wincle	M6
E8	Sutton	G4	Wallasey	H3	Winsford	H6
H5	Sutton (Macclesfield)	L5	Walton	G3	Wistaston	H7
F4	Swettenham	K6	Warburton	H3	Withington	K5
G6	Tabley	J4	Wardle	G7	Woodchurch	C3
E6	Tarporley	G6	Warmingham	J6	Woodford	L4
K3	Tarvin	F6	Waverton	J6	Woodhead	N2
J6	Tattenhall	F7	Weaver	H6	Woodley	L3
D3	Tatton Hall	J4	Weaverham	G5	Woolley	M2
C3	Taxal	H3	Wervin	E5	Wrenbury	G8
J7	Thelwall				Wyburnbury	H8

CORNWALL—KEY TO THE MAP ON PAGE 7119

A	Advent	L1	Gwithian	D6	Minster	B4	St. Blazey	K5	St. Tudy	K2
A	Altarnun	M1	Halsetown	D7	Morvah	B7	St. Breock	J3	St. Veep	L5
Antony	O5	H	Hayle	D7	Morval	N4	St. Breward	L2	St. Wenn	J3
B	Breudhan Steps	G3	Helford	G8	Morwenstow	C1	St. Buryan	B9	St. Winnow	L4
Blisland	L2	H	Helland	K3	Mousehole	C8	St. Cleer	N3	Saltash	P4
Boconnoc	L4	H	Helston	E8	Mullion	F9	St. Clement	H6	Sancreed	B8
Bodmin	K3	H	Herodsfoot	M4	Mylor	G7	St. Clether	M1	Sennen	B9
Bosccastle	A4	I	Illogan	E6	Newlyn	C8	St. Columb Major	H4	Shevock	O5
Boscawen-un	B8	I	Ince Castle	O4	Newlyn East	G5	St. Columb Minor	H4	Sithney	E8
Bosporthennis	C7	J	Jacobstow	C4	Newquay	G4	St. Day	F6	South Hill	N2
Bossiney	A5	K	Kenwyn	G6	North Hill	N2	St. Dennis	J4	South Petherwin	N1
Botus Fleming	O4	K	Kilkhampton	C2	North Tamerton	D4	St. Dominick	O3	Stithians	F7
Boyton	D4	L	Ladock	H5	Otterham	B4	St. Endellion	J2	Stoke Climsland	O2
Braddock	L4	L	Lamoran	H6	Padstow	H2	St. Enodoc	J2	Stratton	C2
Breage	E8	L	Landewednack	F10	Par	K5	St. Erme	H5	Talland	M5
Bude	C8	L	Landrake	O4	Paul	C8	St. Erney	O4	Temple	L2
Budock Water	O3	L	Land's End	A9	Pelynt	M5	St. Erth	D7	Tintagel	A5
Callington	P3	L	Landulph	P4	Pendeen	B7	St. Ervan	H3	Torpoint	P5
Calstock	E7	L	Laneast	M1	Penponds	E7	St. Eval	H3	Towednack	C7
Camborne	L1	L	Lanhydrock	K4	Penryn	G7	St. Ewe	J6	Tregoney	J6
Camelford	L3	L	Lanivet	K4	Pentewan	K6	St. Gennys	B4	Tremaine	C5
Cardinham	F7	L	Lanlivery	K4	Penzance	C8	St. Germans	O4	Treneglos	C5
Carnmenellis	F6	L	Lansallos	M5	Perranarworthal	G7	St. Gluvias	G7	Tresillian	H6
Chacewater	C7	L	Lanteglos	L5	Perranuthnoe	D8	St. Goran	J6	Treslothan	H6
Chysauster	H4	L	Launcells	C2	Perranzabuloe	G5	St. Hilary	D8	Tresmeer	M1
Colan	G7	L	Launceston	N1	Phillack	D7	St. Issey	J3	Trevalga	A4
Come-to-Good	F8	L	Lawhitton	O1	Philleigh	H7	St. Ives	N3	Trewen	N1
Constantine	C2	L	Leant	D7	Pillaton	O4	St. Ives	O5	Truro	G6
Coombe	H6	L	Lesnewth	B4	Polperro	M5	St. John	D7	Tuckingmill	E7
Cornelly	G4	L	Lewannick	N1	Polruan	L5	St. Juliot	B4	Tyardreath	L5
Crantock	J6	L	Lezant	O2	Portcothan	H3	St. Just-in-Penwith	B8	Veryan	J7
Creed	E7	L	Linkinhorne	N2	Portcurnow	B9	St. Just-in-Roseland	H7	Wadebridge	J3
Crowan	G4	L	Liskeard	N3	Portleven	E8	St. Kea	G6	Warbstow	C4
Cubert	F9	L	Little Petherick	H3	Port Isaac	J1	St. Keverne	G9	Warleggan	L3
Cuby	J6	L	Lizard, The	F10	Poughill	C2	St. Kew	K2	Washaway	K3
Cury	L1	L	Looe	N5	Poundstock	C3	St. Keyne	M4	Week St. Mary	C3
Davidstow	K1	L	Lostwithiel	L4	Probus	H6	St. Levan	B9	Wendron	F8
Delabole	M4	L	Ludgvan	D8	Quethiock	N3	St. Mabyn	K2	Whitstone	D3
Duloe	N1	L	Luluyian	K4	Rame	P5	St. Martin	F9	Withiel	J3
Egloskerry	G8	M	Mabe	F8	Redruth	F6	St. Martin (Looe)	N5	Zennor	C7
Falmouth	G7	M	Madron	C8	Restormel Castle	L4	St. Mawes	H7	SCILLY ISLES	
Fock	G7	M	Maker	P5	Roche	J4	St. Merryn	O3	Annet	N10
Flushing	L5	M	Manaccan	G9	Rock	J2	St. Mewan	J5	Bryher	O9
Fowey	D8	M	Marazion	D8	Ruan Lanihorne	H6	St. Michael Caerhays	J6	Eastern Isles	O9
Germoe	H7	M	Marhamchurch	C3	Ruan Major	F10	St. Michael Penkevil	H6	Gugh	O10
Gerrans	E8	M	Mawgan	H3	Ruan Minor	F10	St. Michael's Mount	D8	Hugh Town	O9
Godolphin	L5	M	Mawgan-in-Grade	F9	St. Agnes	F5	St. Minver	J2	St. Agnes	O10
Golant	J6	M	Mawnan	G8	St. Allen	G5	St. Neot	M3	St. Martin's	O9
Grade	C8	M	Menheniot	N4	St. Anthony	G8	St. Pinnock	M4	St. Mary's	O9
Gramound	E9	M	Merther	H6	St. Anthony-in-Roseland	H8	St. Sampson	L5	Samson	O9
Gulval	F7	M	Mevagissey	K6	St. Austell	K5	St. Stephen	J1	Tresco	O9
Gunwalloe	E7	M	Michaelstow	K2			St. Teath	K1	Western Rocks	N10
Gwennap										
Gwinear										

CUMBERLAND—KEY TO THE MAP ON PAGE 7143

A	Abbey Town	C7	Birdoswald	J5	Caldbeck	E8	Cumrew	H7	Frizington	B11
A	Aikton	E6	Blencow	G9	Calderbridge	B12	Cumwhitton	H7	Garrigill	L8
Ainstable	H7	B	Bolton Gate	D8	Camerton	B9	Dacre	G10	Gilcrux	C8
Allhallows	D8	B	Bootle	C15	Carlisle	F6	Dalston	F7	Gilsland	J5
Allonby	B8	B	Borrowdale	E11	Castle Carrock	H6	Dean	B10	Glassonby	J8
Alston	K7	B	Bowness	D5	Castle Sowerby	F9	Dearham	B9	Gosforth	B13
Arledon	B11	B	Brampton	H5	Cleator	B12	Distington	B10	Great Corby	G6
Armathwaite	H7	B	Bridekirk	C9	Clifton	B10	Drigg	B13	Great Orton	E6
Aspatia	C8	B	Brigham	B9	Cockermouth	C9	Eaglesfield	C10	Great Salkeld	H9
Bassenthwaite	D10	B	Bromfield	D7	Corney	C14	Edenhall	H9	Greystoke	G9
Beaumont	F6	B	Broughton	B9	Croglin	J7	Egremont	B12	Haile	B12
Beckermat	B13	B	Burgh-by-Sands	E6	Crosby-on-Eden	G6	Ennerdale	B11	Halithwaites	D15
Bewcastle	H4	B	Buttermere	D11	Crosscanonby	B8	Eskdale	D13	Harrington	A10

Hayton	C8	Kirkcumbess	H4	Mosedale	F9	Raughton Head	F7	Torpenhow	D8
Hensingham	A11	Kirkland	B11	Mosser	C10	Ravenglass	C14	Upha	D14
Hesket-in-the Forest	G7	Kirklington	G5	Muncaster	C14	Renwick	J8	Waberthwaite	C14
Holme St. Cuthbert	C7	Kirkoswald	H8	Mungisdale	F9	Rockcliffe	F5	Walton	H5
Hutton-in-the-Forest	G9	Lamplugh	B11	Naworth	H5	St. Bees	A12	Warwick	G6
Ireby	D9	Lancaster	H5	Nenthead	L8	St. John's-In-the-Vale	E10	Wassdale	C13
Irthington	H5	Langwathby	J9	Netherby	F4	Scabley G5	G6	Watermillock	G10
Irton	C13	Lazonby	H8	Newlands	F8	Seascale	B13	Westward	E8
Isel	C9	Little Salkeld	J9	Newton Arlosh	D6	Sebergham	D9	Wetheral	G6
Ivegill	G8	Longtown	F5	Newton Reigny	G9	Setmurthy	F8	Whitham	C15
Keswick	E10	Lorton	C10	Nichol Forest	G8	Silloth C6	G9	Whitebeck	C15
Kirkcandrewson-Esk	F4	Lowseswater	C11	Ousby	J9	Skelton	J9	Whitehaven	A11
Kirkbampton	E6	Maryport	B9	Over Denton	J5	Skirwith	G9	Wigton	E7
Kirkbride	D6	Matterdale	F10	Penrith	H9	Stanwix	F4	Workington	A10
		Melmerby	J8	Plumland	C8	Stapleton	H6	Wreay	G7
		Millom	D16	Plumpton Wall	H8	Threlkeld	E10	Wythburn	E12
		Moresby	A11	Ponsobny	B13	Thursby	E7	Wythorn	D10

DERBYSHIRE—KEY TO THE MAP ON PAGE 7149

Abney	D4	Chaddesden	F9	Froggatt	D4	Marston	F8	Smalley	F8
Alderwasley	E7	Chapel-en-le-Frith	B3	Glossop	B2	Montgomery	C9	Smisby	F11
Alfreton	F6	Chatsworth	E5	Great Longstone	D5	Marston-on-Dove	D10	Snelston	C8
Alkmonton	D9	Chellaston	F10	Grindleford Bridge	D4	Matlock	E6	Somershall Herbert	C9
Allestree	F8	Chelmorton	C5	Haddon Hall	D5	Melbourne	F10	South Normanton	G6
Alport	D5	Chesterfield	F5	Hardwick Hall	G6	Mellor	A3	South Wingfield	F7
Alsop-en-le-Dale	C7	Church Broughton	D9	Hartington	C6	Middleton	E6	Spondon	F9
Alvaston	F9	Church Gresley	E11	Hartshorne	E11	Middleton	F8	Stanley	G8
Ambergate	F7	Clay Cross	F6	Hassop	D4	(Youlgreave)	D6	Stanton-by-Bridge	F10
Ashbourne	D8	Clowne	G4	Hathersage	D3	Milford	F8	Stanton-by-Dale	G9
Ashford	D5	Codnor	G7	Hatton	D10	Miller's Dale	C4	Stanton-in-Peak	D5
Ashopton	D3	Cressbrook	C4	Hayfield	B3	Monyash	C5	Staveley	G4
Ashover	F6	Creswell	H4	Hazelwood	E8	Morley	F8	Steetley	H4
Aston-on-Trent	G10	Crich	F7	Heage	F7	Morton	F6	Stoney Middleton	D4
Ault Hucknall	G5	Cromford	E6	Heanor	G8	Mugginton	E8	Sudbury	C9
Bakewell	D5	Cubley	C9	Heath	G5	Netherseal	E12	Sutton-on-the-Hill	D9
Ballidon	D7	Curbar	D4	Higham	F6	Newbold	F4	Sutton Scarsdale	G5
Bamford	D3	Dalbury	E9	Hilton	D10	New Mills	A3	Swadincote	E11
Barlborough	G4	Dale Abbey	G9	Hognaston	D7	Newton Solney	E10	Swarkeston	F10
Barlow	F4	Darley Abbey	G9	Holbrook	F8	Norbury	C8	Taddington	C5
Barrow-on-Trent	F10	Darley Dale	E6	Holloway	E6	North Wingfield	F5	Thorpe	C7
Barton Blount	D9	Denby	F8	Holmesfield	E4	Ockbrook	G9	Tibshelf	G6
Baslow	D4	Derby	F9	Hope	C3	Old Brampton	F5	Ticknall	F10
Besley	E5	Derwent	D3	Hopton	E7	Osmaston	D8	Tideswell	C4
Beighton	G3	Woodlands	D6	Horsley	F8	Over Haddon	D5	Tissington	D7
Belper	F7	Dethick	C9	Hulland	D8	Parwich	D7	Trusley	E9
Birchover	D8	Dove Holes	B4	Lidridgehay	E7	Peak Forest	C4	Turnditch	E8
Blackwell	C5	Doveridge	C9	Ilkeston	G8	Pentrich	F7	Twyford	E10
Bolsover	G5	Dronfield	F4	Ingleby	F10	Pilsley	G6	Upper Booth	C3
Bonsall	E6	Duffield	F8	Kedleston	E8	Pilsley (Edensor)	D5	Upper Langwith	H5
Borrowash	G9	Earl Sterndale	B5	Killamarsh	G3	Pinxton	G6	Upper Padley	D4
Boulton	F9	Eckington	G4	King's Newton	F10	Pleasley	E8	Walton-on-Trent	D11
Boyleston	D9	Edale	C3	Kingsterndale	B5	Quarndon	E9	West Hallam	G8
Brackenfield	F6	Edensor	D5	Kirk Hallam	G8	Radbourne	E10	Weston-on-Trent	F10
Bradenbury	D7	Edlaston	D8	Kirk Ireton	E7	Repton	E6	Whatstandwell	E7
Bradley	C3	Egginton	D7	Kirk Langley	E9	Riber	G7	Whetton	C4
Brailsford	D8	Elmton	D6	Little Eaton	F8	Riddings	F7	Whittington	F4
Brassington	D7	Elton	H4	Little Longstone	D5	Ripley	G9	Whitwell	H4
Breadsall	F8	Elvaston	F9	Littleover	E9	Risley	E5	Willington	E10
Breaston	G9	Etwell	E9	Litton	C4	Rowley	G9	Wilne	G9
Bretby	E10	Eyam	D4	Long Eaton	G9	Sandiacre	G9	Wingerworth	F5
Buxton	B4	Fairfield	B4	Longford	D9	Sawley	G5	Winstar	D6
Caldwell	E11	Fenny Bentley	D7	Longway Band	E7	Scarliffe	D10	Wirksworth	E7
Calke	F11	Findern	E10	Lullington	D12	Scropton	G10	Wormhill	C4
Carsington	D7	Foremark	E10	Mackworth	E9	Shirland	F6	Yeaveley	D8
Castleton	C3	Foston	D9	Mapleton	C7	Shirley	D8	Youlgreave	D6

DEVONSHIRE—KEY TO THE MAP ON PAGES 7120 and 7121

Abbots	C6	Beer	K4	Bratton Clovelly	D9	Butterleigh	K7	Colaton Raleigh	L10
Abbotsham	C5	Bolstone	F9	Bratton Fleming	F3	Cadbury	J7	Coldridge	G7
Abbotskerswell	J12	Bere Alston	D12	Braunton	D4	Cadeleigh	J7	Colebrooke	G8
Alphington	J9	Bere Ferrers	D13	Brendon	G2	Calverleigh	J6	Colyton	L3
Alverdiscott	D5	Berrynarbor	E2	Brentor	D11	Chagford	G10	Combe-in-Teignhead	J12
Alwington	C5	Berry Pomeroy	H13	Bridestowe	D9	Challacombe	G3	Combe Martin	E2
Appledore	D4	Bickleigh	H11	Bridford	H10	Charles	F4	Compbyne	L4
Arlington	F3	(Plymouth)	E13	Bridgerule	B8	Chawleigh	G7	Cookbury	C7
Ashburton	G12	Bickleigh	K7	Brixham	J13	Cheriton Bishop	H9	Copplestone	H8
Ashbury	D8	(Tiverton)	L10	Brixton	E14	Cheriton Fitzpaine	J7	Cornwood	F13
Ashcombe	J11	Bideford	D5	Broad Clyst	K8	Chittlehampton	F5	Cornworthy	H14
Ashford	E4	Bideford	D5	Broadhembury	M7	Chivellstone	H16	Coryton	D10
Ashprington	H13	Bigbury	F15	Broadhempston	C9	Christow	H10	Countisbury	G2
Ashreigney	F6	Bishop's Nympton	G5	Brushford	F7	Chudleigh	J11	Credition	H8
Ashton	J10	Bishop's Tawton	E4	Buckerell	M8	Chulmeigh	G6	Cullampton	L7
Ashwater	C9	Bishopsteignton	J11	Buckfastleigh	G12	Churchstow	G15	Culmstock	L6
Atherington	E5	Blackawton	H14	Buckland Brewer	C6	Churston Ferrers	J13	Dalwood	L3
Aveton Gifford	G15	Black Torrington	D7	Buckland Filleigh	D7	Clawton	B8	Darlington	H13
Awliscombe	M8	Blenleigh	F7	Buckland	D12	Clayhidon	M6	Dartmeet	F11
Axminster	L3	Bovey Tracey	H11	Monachorum	D12	Clovelly	B5	Dartmouth	J14
Axmouth	L4	Bow	G8	Buckland-in-the-Moor	G11	Clyst Honiton	K9	Dawlish	K11
Aylesbeare	L9	Bradford	C7	Buck's Mills	B5	Clyst St. George	K9	Dean Prior	G13
Babbacombe	K12	Bradninch	K7	Budleigh	L6	Clyst St. Lawrence	L8	Denbury	H12
Bampton	K5	Bradstone	C10	Burlescombe	L6	Cockington	J12	Devonport	D14
Barnstaple	E4	Bradworthy	B6	Burrington	F6	Coffinswell	J12	Diptford	G13
Beaford	E6	Branscombe	K4			Cofton	K11	Dittisham	J14

Devonshire

GUIDE TO 10,000 PLACES

Dorsetshire

Dodbrooke G15
 Doddscombsleigh J10
 Dolton E7
 Dowland E7
 Down St. Mary G8
 Drewsteignton G9
 Dunchideock J10
 Dunkeswell M7
 Dunsford H9
 Dunterton C11
East Allington H14
 East Budleigh H14
 East Down E3
 East Ogwell H12
 East Portlemouth G16
 East Worlington H6
 Egg Buckland D13
 Eggesford F7
 Ermington F14
 Exbourne E8
 Exeter J9
 Exminster K10
 Exmouth K11
Farway M8
 Feniton M8
 Filleigh F5
 Frithelstock D6
Georgeham D3
 GeorgeNympton G5
 Gidleigh F9
 Gittisham M8
 Goodleigh E4
 Great Torrington D6
Haccombe J12
 Halberton K6
 Halwell H14
 Halwill C8
 Harberton H13
 Harford F13
 Harpford L9
 Hartland A5
 Hatherleigh E8
 Hawkchurch M3
 Heanton D4
 Punchardon M6
 Hemyock M6
 Hennock E10
 High Bickington H11
 Highweek G4
 High Bray G4
 Hittisleigh F14
 Holbeton F14
 Holcombe Burnell J9
 Holcombe Rogus J6
 Holne G12
 Holsworthy B8
 Honiton M8
 Horwood D5

Hulsh E7
 Huntshaw D5
 Huxham K8
 Idlesleigh E7
 Ilfracombe D2
 Ilstington H11
 Instow D4
 Inwardleigh E8
 Ipplepen H12
 Ivybridge F13
Kelly C10
 Kenn J10
 Kentisbeare L7
 Kenton K10
 Kingsbridge G15
 Kingskerswell J12
 King's Nympton F6
 Kingsteignton J11
 Kingswear J14
 Knowstone H5
Lamerton D11
 Landcross D5
 Landkey E4
 Lapford G7
 Lee D2
 Leusdon G11
 Lewtrenchard D10
 Lifton C10
 Littleham M8
 Littleham-by-
 Bideford D5
 Little Hempston H13
 Little Torrington D6
 Loddiswilling G14
 Loxbeare J6
 Loxhore F3
 Luppitt M7
 Lustleigh H10
 Lydford D10
 Lymstone K10
 Lymouth G2
 Lynton G2
Malborough G15
 Mamhead K10
 Manaton G10
 Marldon J13
 Martinhoe F2
 Marwood E3
 Marystow C10
 Marytavy D11
 Meavy E12
 Meeth E7
 Membury L2
 Merton E7
 Meshaw G6
 Milton Abbot C11
 Milton Damerel C7
 Modbury F14

Molland H5
 Monkleigh D6
 MonkOkehampton E7
 Morchard Bishop H7
 Moreleigh G14
 Moreton-
 hamstead G10
 Mortehoe D3
 Musbury L3
Newton Abbot J12
 Newton St.
 Petrock C7
 Newton St Cyres J8
 Northam D5
 North Bovey G10
 North Huish G13
 Northleigh K3
 Northlew D8
 North Molton G4
 North Petherwin B9
 North Tawton F8
 Nymet Rowland K7
Offwell G3
 Okehampton E9
 Otterton L10
 Ottery St. Mary M9
Paignton J13
 Pancrasweek E7
 Parkham C5
 Paracombe F3
 Payhembury L8
 Peteravy D11
 Petrockstow D7
 Pilton E4
 Pinhoe K9
 Plymouth D14
 Plympton St. Mary E13
 Plympton St.
 Maurice E14
 Plymtree D14
 Polmtree L8
 Poltimore K8
 Postbridge F11
 Powderham K10
 Princetown E11
 Pyworthy B8
Rackenford H6
 Rattery G13
 Revelstoke E15
 Rewe K8
 Ringmore F15
 Ringmore
 (Teignmouth) J12
 Roborough E6
 Rockbeare L9
 Romansleigh G6
 Rose Ash H5
 Rousdon L4

St. Budeaux D13
 St. Giles-in-the
 Wood E6
 St. Mary Church J12
 Salcombe G16
 Salcombe Regis M9
 Courtenay F8
 Sampford Peverell L6
 Sampford Spiney E11
 Sandford H8
 Satterleigh F5
 Seaton L4
 Shaugh Prior E13
 Shebbear C7
 Sheepstor E12
 Sheepwash D7
 Sherford H15
 Shillingford St.
 George J10
 Shirwell E3
 Shute L3
 Sidbury M9
 Sidmouth M10
 Silvertown K8
 Slapton H15
 Sourton E9
 South Brent G13
 South Huish G15
 Southleigh K4
 South Milton G15
 South Molton G5
 South Pool H15
 South Tawton F9
 Spreyton G8
 Starcross K10
 Staverton H13
 Stockland L2
 Stockleigh Pomeroy J8
 Stoke Canon K8
 Stoke Fleming J14
 Stoke Gabriel J13
 Stoke-in-
 Teighhead J12
 Stokenham H15
 Stoodleigh J6
 Stowford C10
 Sutcombe B7
 Swimbridge F4
 Sydenham C11
 Damerel L8
Talaton L8
 Tamerton Foliot D13
 Tavistock D11
 Tawstock E4
 Teigngrace H11
 Teignmouth K11
 Tetcott B9
 Thornbury C7
 Thorverton J8
 Throwleigh F9
 Thrushelton D10
 Thurlstone F15
 Tiverton K7
 Topham K10
 Torbray H12
 Torquay J13
 Totnes H13
 Trenishoe F2
 Trusham J10
 Two Bridges F11
Uffculme L6
 Ugborough F14
 Uplyme M3
 Uplowman K6
 Upton Hellions H8
 Upton Pyne J8
Venn Ottery L9
Walkhampton E12
 Warkleigh F5
 Washfield J6
 Wear Giffard D5
 Welcombe A6
 Wembury E14
 Werrington B10
 West Alvington G15
 West Anstey H5
 West Down D3
 Westleigh D5
 West Ogwell H12
 Weston Peverell D13
 West Putford C6
 Westward Ho C4
 West Wool-
 fardisworthy B6
 West Worlington G6
 Whitchurch D11
 Widgecombe-in-
 the-Moor G11
 Widworthy K3
 Willand L7
 Winkleigh F7
 Witheridge H6
 Withycombe K10
 Raleigh H12
 Wolborough K10
 Woodland H12
 Woodleigh G14
 Woolacombe D3
Yarcombe L2
 Yarncombe E5
 Yealampton E14
Zeal Monachorum G8

DORSETSHIRE—KEY TO THE MAP ON PAGE 7117

Abbotsbury E6
 Affpuddle G5
 Alderholt J3
 Almer L5
 Arne K6
 Askerswell D5
 Athelhampton G5
Badbury Rings E4
 Batcombe K4
 Beaminstor D4
 Belchalwell G3
 Bere Regis H5
 Bincombe F6
 BinghamMelcombe G4
 Bishop's Caundle F3
 Blandford H4
 Blandford St. Mary J4
 Bloxworth H5
 Bothenhampton D5
 Bradford Abbas E3
 Bradford Peverell F5
 Bradpole C5
 Bridport C5
 Broadway F6
 Broadwindsor C4
 Brownsea K6
 Bryant's Puddle G5
 Buckhorn Weston H1
 Buckland Newton G1
 Burton Bradstock D6
Canford K5
 Cattistock E4
 Cerne Abbas F4

Chalbury K4
 Chaldon Herring G6
 Charlton Marshall J4
 Charminster F5
 Charmouth B5
 Cheselbourne G5
 Chesil Beach E7
 Chettle J3
 Chideock C5
 Chilcombe D6
 Church Knowle J7
 Clifton Maybank E3
 Compton Abbas E5
 Compton Valence E5
 Corfe J7
 Corfe Mullen K5
 Corscombe D4
 Cranborne L3
 Creech J7
Dewlish G5
 Dorchester F6
 Durweston H3
East Chelborough D4
 East Holme J6
 East Lulworth H7
 East Stour G1
 Eggardon Hill D5
 Evershot E4
Farnham J2
 Farrington H3
 Fifehead Magdalen G2
 Fifehead Neville G3

Fleet K4
 Fontmell Magna G6
 Forde Abbey J4
 Frampton F5
 Frome Vauchurch E5
Gillingham G1
 Godmanstone F5
 Gussage K3
Halstock D3
 Hammoon H3
 Handley K2
 Haselbury Bryan G3
 Higher G5
 Bockhampton G5
 Hillfield E4
 Hinton D4
 Hinton St. Mary L3
 Holnest J7
 Holwell G5
 Horton F6
Ibberton H3
 Iwerne Minster D3
Kimmeridge J7
 Kingstag F3
 Kingston J7
 Kingston Magna G2
Langton J4
 Leigh E3
 Litton Cheney D6
 Loders D5
 Long Bredy E6
 Long Burton F3

Lulworth H7
 Lydlinch G3
 Lyme Regis B5
 Lytchett Matravers J5
Maiden Newton E5
 Mapperton D4
 Marnhull G2
 Marshwood Vale C5
 Melbury Bubb E4
 Melbury Osmond E3
 Melbury Sampford E4
 Meplash D5
 Milborne St. Andrew G5
 Milton Abbas G4
 Minsterne Magna F4
 Monkton Wyld B5
 Morden J5
 More Crichel K3
 Moreton G6
 Motcombe H1
Netherbury C5
 Nether Cerne F5
 Nether Compton E2
Oborne F2
 Okeford G3
 Fitzpaine G7
 Osmington G6
 Owermoigne G6
Pamphill K4
 Pentridge K2
 Pilsdon C4
 Pimperne J3
 Poole K6
 Portisham E6
 Portland F8
 Powerstock D5
 Poxwell G6
 Poyntington F2
 Preston E6
 Puddlehinton G5
 Puddletown F5
 Puddletrenthide F4
 Pulham F3
 Punctonknowle D6
 Purbeck J6
 Purse Caundle F2
Radipole F7
 Rampisham E4
St. Aldehelm's Head J8
 Sandford Orcas E2
 Shaftesbury H1
 Shapwick J4
 Sherborne E2
 Shillingstone H3
 Shilton Gorge D6
 Shroton H3
 Silton Q1
 South Perrott C4
 Spettisbury J4
 Stalbridge G2
 Stanton St. Gabriel C5
 Steeple J7
 Steepleton Iwerne H3
 Stinsford F6

Stock Gaylard	G3	Tarrant Crawford	J4	Turnworth	H3	Wimborne	K4	Winterborne	
Stockwood	E4	Tarrant		Tyneham	H7	Wimborne St. Giles	K3	Whitchurch	H4
Stoke Abbott	C4	Gunville	J3	Up Cerne	F4	Winfrith Newburgh	H6	Witchampton	K4
Stoke Wake	G4	Tarrant Hinton	J4	Upway	F6	Winterborne Abbas	E6	Woodcuts	J2
Stourpaine	H3	Tarrant Keynton	J3			Winterborne Came	F6	Woodlam	K3
Stourton Caundle	F3	Tarrant Rushton	J4	Wareham	J6	Winterborne		Woodsford	G6
Stratton	F5	Thorncombe	B4	Warmwell	G6	Kingston	H5	Woodyates	K2
Studland	K6	Thornford	E3	West Chelborough	D4	Winterborne		Wool	H6
Sturminster		Tincton	G5	West Knighton	G6	St Martin	F6	Woolland	G4
Marshall	J4	Todber	G2	West Parley	L5	Winterborne		Wootton Glanville	F3
Sturminster Newton	G3	Toller Fratrum	E5	West Stafford	G6	Steepleton	E6	Worth Matravers	K7
Swanage	K7	Toller Porcorum	E5	West Stour	G2	Winterborne		Wraxall	E4
Swyre	D6	Tolpuddle	G5	Weymouth	F7	Stickland	H4	Wyke Regis	F7
Sydling St Nicholas	E5	Trent	E2	Whitchurch	C5	Winterborne		Wynford Eagle	E5
Symondsbury	C5	Turners Puddle	H5	Whitcombe	F6	Tomson	H5	Yetminster	E3

DURHAM—KEY TO THE MAP ON PAGE 7146

Aycliffe	H6	Dalton Piercy	K5	Haughton-le-Skerne	H7	Middleton-in-Teessdale	D6	Stanley	G3
Baldon	J2	Darlington	H7	Hawthorn	J4	Middleton St. George	J8	Stella	F1
Barmpton	H7	Dipton	G7	Headlam	G7	Middlebridge	G6	Stillington	J6
Barnard Castle	E7	Dunston	G1	Healeyfield	E3	Monk Hesleden	K5	Stockton-on-Tees	K7
Bearpark	G4	Durham	H4	Hebburn	H1	Monkton	H1	Stotfield Burn	D4
Benfieldside	E3	Easington	J4	Hedley Hill	F4	Mordon	H6	Streatham Castle	E7
Billingham	K6	Easington Lane	J3	Heighington	G6	Moorley	H3	Sunderland	J2
Birtley	G2	Eastgate	D4	Hett	H5	Muggleswick	E3	Sunderland Bridge	H5
Bishop Auckland	H5	East Hartburn	J7	Hetton Downs	J3	Newbottle	C6	Sunnyside	F4
Bishop Middleham	H5	East Herrington	J3	Hetton-le-Hole	J3	Newfield	G5	Tanfield	G2
Bishopton	J7	East Rainton	H3	Heworth	H1	New Shildon	G6	Thornley	F5
Black Hill	E3	Eastchester	F2	High Coniscliffe	G7	Norton	K7	Thornley (Durham)	J4
Blackwell	H8	Edmondsbyers	D3	High Etherley	F6	Offerton	H2	Thorne Thewles	J6
Blaydon	F1	Edmondsley	G3	High Fell	H2	Ouston	G3	Tow Law	F4
Bolam	G6	Eggleston	D6	Houghton-le-Side	G7	Painshaw	H2	Trimdon	J5
Bournmoor	H7	Eggleston	G6	Howden Wear	F5	Pelton	G3	Tudhoe	G5
Brafferton	H3	Elton	J7	Howle	E6	Piercebridge	G7	Tunstall	J3
Brancepeth	G5	Elwick	K5	Hunstanworth	D3	Port Clarence	K6	Usworth	H2
Brierton	K5	Embleton	J5	Hunwick	G5	Preston-le-Skerne	H6	Wackerfield	F6
Broom	G4	Escomb	G6	Hurworth	H8	Quebec	F4	Waldridge	G3
Burnhope	G3	Esh	G4	Hutton Henry	J5	Redmarshall	J7	Walworth	G6
Burnopfield	F2	Evenwood	F6	Hylton	J2	Redworth	G6	Washington	H2
Byers Green	G5	Evenwood	F6	Ingletton	F7	Rhyope	J3	Waterhouses	G4
Carlton	J6	Field	H2	Ingletton	F3	Ryton	F1	West Auckland	F6
Carr Ville	H4	Ferryhill	H5	Iveston	C5	Sacriston	G3	Westerton	G5
Castle Eden	K4	Fishburn	J5	Jarrow	H1	Sadberge	H7	Westgate	C4
Castleside	E3	Forest	C5	Killerby	G7	St. Helens Auckland	G6	West Hartlepool	L5
Castletown	J2	Framwellgate	H4	Kirk Merrington	G3	St. John's Chapel	C5	West Herrington	H3
Chester-le-Street	H3	Moor	H5	Knitsley	F3	Saltley	F4	West Pelton	G3
Chilton	H5	Frosterley	J2	Lamesley	G2	Seaham	J3	West Rainton	H3
Chopwell	F2	Fulwell	F7	Lanchester	F3	Seaham Harbour	J3	Whickham	G2
Cleadon	J1	Gateshead	G1	Langley Park	F3	Seaton Carew	L5	Whitburn	J1
Cleatham	F7	Great Burdon	H7	Leagate	G4	Seedgefield	J6	Whitton	J6
Coatham		Greatham	K6	Leazes	F3	Shadforth	H4	Whorlton	F7
Mundeville	H7	Great Lumley	H3	Leazes	F2	Sherburn	K5	Willington	G5
Cockerton	F6	Great Stainton	H6	Lintzford	F2	Shildon	H4	Wingate	J5
Cockfield	F3	Greenside	F2	Little Stainton	J7	Shincliffe	G6	Winlaton	F2
Consett	H5	Grindon	J6	Long Newton	J8	Shotton	H4	Winston	F7
Cornforth	F4	Halgarth	H4	Low Dinsdale	J8	Silksworth	J3	Witton Gilbert	G4
Cornsay	G6	Hamsterley	F5	Low Fell	G2	Sockburn	J8	Witton-le-Wear	F5
Coundon	C4	Hart	K5	Low Westwood	F2	South Moor	J3	Witton Park	F6
Cowpen Bewley	K6	Hartlepool	L5	Marley Hill	G2	South Shields	G3	Wolsingham	E5
Cowhill	H5	Hartlepool	G3	Meadowfield	G2	Spennymoor	J1	Wolviston	K6
Coxhoe	G3	Harton	B1	Medomsley	F2	Staindrop	G5	Woodham	H6
Craghead	F1	Harwood	J4	Middlestone	G5	Stanhope	F7	Woodland	E6
Crawcrook	F5	Haswell					D4	Wrekenton	H2

ESSEX—KEY TO THE MAP ON PAGE 7126

Abbottton	K4	Berden	C3	Canewdon	J7	Dedham	L2	Fingringhoe	K4
Abbess Roding	E5	Berechurch	K4	Canvey Island	G8	Dengie	K6	Fobbing	F8
Aldham	J3	Billericay	F7	Castle Hedingham	Q2	Doddington	E6	Ford End	F4
Alphamstone	H2	Birch	D4	Chadwell St. Mary	J9	Dovercourt	N2	Fordham	J3
Airesford	L4	Birchanger	J3	Chapel	F3	Downham	G7	Foster Street	D5
Althorne	J6	Birdbrook	F1	Chelmsford	F5	Dunton	F8	Foulness	K7
Arleigh	L3	Blackmore	E6	Chickney	E3	Earls Colne	H3	Frating	L3
Arkesden	C2	Black Notley	G4	Chignal St. James	F5	East Donyland	K4	Frinton-on-Sea	N4
Ashdon	E1	Bobbingworth	D6	Chignal Smealey	F5	East Ham	C8	Fryerning	E6
Asheldam	J6	Bocking	G3	Chigwell	C7	East Hanningfield	G6	Fyfield	E5
Ashen	G1	Boreham	G5	Chingford	B7	East Horndon	E8	Galleywood	
Aslington	H7	Borley	H1	Chipping Ongar	D6	Easthorpe	J4	Common	F6
Aveley	E9	Bowers Gifford	G8	Chrishall	C2	East Mersea	L4	Gestingthorpe	G2
Aythorp Roding	E4	Boxted	K2	Clacton-on-Sea	M4	East Thurrock	E9	Goldhanger	J5
Bardfield Saling	F3	Bradfield	M3	Clavering	C2	East Tilbury	F9	Good Easter	E5
Barking	C8	Bradwell-on-Sea	H4	Coggeshall	H4	Eastwood	H8	Gosfield	G3
Barkingside	C8	Brantree	G3	Colchester	K3	Elmdon	C1	Grays Thurrock	E9
Barling	J8	Brentwood	E7	Cold Norton	H6	Elmstead	L3	Great Baddow	F6
Barnston	F4	Brightlingsea	L4	Copford	J3	Elsenhams	D3	Great Bardfield	F3
Basildon	F8	Broomfield	F5	Corringham	F8	Epping	C6	Great Bentley	H5
Beauchamp		Broxted	E3	Cranham	E8	Fairing Upland	C6	Great Braxted	L4
Roding	E5	Buckhurst Hill	C7	Cressing	G4	Fairstead	G4	Great Bromley	L3
Beaumont	M3	Bulmer	H1	Dagenham	D8	Faulkbourne	G4	Great Burstead	F7
Belchamp Otten	G1	Bulphan	E8	Danbury	G6	Felstead	H4	Great Chelfield	E4
Belchamp St. Paul	G1	Burnham	J7	Debden	D2	Finchingfield	F2	Great Chesterford	D1
Belchamp Walter	H1	Buttsbury	F6					Great Clacton	M4

Great Dunmow	E4	Kelvedon	H4	Margaret Roding	E5	Roydon	C5	Tilty	E3
Great Easton	E3	Kelvedon Hatch	E7	Margaretting	F6	Runwell	G7	Tiptree Heath	H4
Great Hallingbury	D4	Kirby-le-Soken	N3	Marks Tey	J3	Saffron Walden	D2	Tollesbury	J5
Great Henny	H2	Laindon	F8	Mashbury	F5	St Osyth	L4	Tolleshunt D'Arcy	J5
Great Holland	N4	Lamarsh	H2	Matching	D5	Salcott	J5	Tolleshunt Knights	J5
Great Horkesley	K2	Lambourne	D7	Messing	J4	Sandon	G6	Tolleshunt Major	J5
Great Leighs	G4	Langdon Hills	F8	Middleton	H1	Shalford	F3	Toppsfield	G2
Great Maplestead	G2	Langenhoe	K4	Mistley	L2	Sheering	D5	Twinstead	H2
Great Oakley	M3	Langford	H5	Moreton	D5	Shelley	D6	Ugley	D3
Great Parnon	C5	Langham	K2	Mount Bures	J2	Shenfield	E7	Ulting	G5
Great Saling	F3	Langley	C2	Mountnessing	E7	Shoeburyness	J8	Upminster	D8
Great Sampford	E2	Latton	C5	Mucking	F9	Shoeland	J8	Vange	F8
Great Stambbridge	J7	Lawford	L3	Mundon	H6	Sible Hedingham	G2	Wakes Colne	H3
Great Tey	H3	Laver Marney	J4	Navestock	D7	South Benfleet	G8	Waltham	B6
Great Totham	H5	Leaden Roding	E5	Nazeing	C6	Southchurch	J8	Walthamstow	B8
Great Wakering	H8	Leigh	H8	Netteswell	C5	Southend	J8	Walthamstow	B8
Great Waltham	F5	Lexden	K3	Nevedon	G7	South Hanningfield	G7	Naze	N4
Great Warley	E7	Leyton	B8	Newport	D2	Southminster	J6	Wanstead	C8
Great Wigborough	J4	Lindell	E3	Noak Hill	D7	South Ockendon	E8	Weeley	M3
Great Yeldham	G2	Liston	H1	North Benfleet	G8	South Weald	E7	Wenden Lofts	C2
Greenstead	K3	Little Baddow	G5	North Ockendon	E8	Springfield	F5	Wendens Ambo	D2
Greenstead	D6	Little Braxfield	F3	North Shoebury	J8	Stambourne	F1	Wennington	D9
Hadleigh	H8	Little Bentley	L3	North Weald	D6	Stanford-le-Hope	F9	West Bergholt	J3
Hadstock	D1	Little Braxted	H4	Bassett	E6	Stanford Rivers	D6	Westcliff	H8
Halstead	G3	Little Bromley	L3	Norton Mandeville	E6	Stansted	D3	West Ham	C8
Harlow	C5	Littlebury	D1	Orsett	E8	Mountfitchet	J3	West Hanningfield	F6
Harwich	N2	Little Burstard	F7	Paglesham	J7	Stanway	D7	West Mersea	K5
Hatfield Broad Oak	D4	Little Canfield	E4	Panfield	G3	Stapleford Abbots	D6	West Thurrock	E9
Hatfield Peverel	G5	Little Chesterford	D1	Pattiswick	H3	Stapleford Tawney	F3	West Tilbury	F9
Havering-atte-Bower	D7	Little Clacton	M4	Pebmarsh	K4	Steeple Bumpstead	F1	Wethersfield	F2
Hawkwell	H7	Little Dunmow	E3	Peldon	G1	Stifford	E9	White Colne	H3
Helion Bumpstead	F1	Little Easton	F4	Pentlow	G8	Stisted	G3	White Notley	G4
Hempstead	E2	Little Hallingbury	D4	Pitsea	H8	Stock	F6	White Roding	D5
Henham	D3	Little Horkesley	J2	Pleshey	H6	Stondon Massey	E6	Wicken Bonhunt	D2
Heybridge	H5	Little Ilford	C8	Pritlewell	H8	Stow Maries	H6	Wickford	G7
High Beech	C7	Little Laver	D5	Perleigh	H6	Strethall	C1	Wickham Bishops	H5
High Easter	E4	Little Leighs	F4	Quendon	D3	Sturmer	F1	Wickham St Paul	H2
High Laver	D5	Little Maplestead	H2	Radwinter	E2	Sutton	J8	Widdington	D2
High Ongar	D6	Little Oakley	N3	Rainham	D9	Takeley	D4	Widford	F6
High Roding	E4	Little Parnon	C5	Ramsden Bellhouse	F7	Tendring	M3	Willingale	E5
Hockley	H7	Little Sampford	F2	Ramsey	M3	Terling	G4	Wimbish	E2
Hornchurch	D8	Little Tey	H3	Rawreth	G7	Thaxted	E2	Witham	H5
Horndon-on-the-Hill	F8	Little Totham	J5	Rayleigh	G7	Theydon Bois	C6	Wivenhoe	K4
Hutton	E7	Little Wakering	J8	Rayne	F4	Theydon Garnon	C6	Wix	M3
Hythe	K3	Little Waltham	F5	Retendon	G7	Theydon Mount	D6	Woodford	C7
Ilford	C8	Little Warley	E8	Rickling	D2	Thorpe-le-Soken	M4	Woodham Ferrers	G6
Ingatestone	F6	Little Wigborough	K4	Ridgewell	G1	Thorrington	L4	Woodham Mortimer	H6
Ingrave	H7	Loughton	C7	Rivenhall	H4	Thundersley	G8	Woodham Walter	G5
Inworth	E4	Magdalen Laver	D5	Rochford	H5	Tilbury	F9	Wormingford	J2
		Maldon	H5	Romford	L2	Tilbury-Juxta-Clare	G1	Wrabness	M2
		Manningtree	L2	Roxwell	D3	Tillingham	K6	Writtle	F6
		Manuden	D3						

GLoucestershire—KEY TO THE MAP ON PAGE 7122

Abinghall	C5	Bledington	K4	Coln Rogers	H6	English Bicknor	B5	Hucclecote	E5
Abson	C11	Blockley	J3	Coln St. Aldwyn	J7	Evenlode	K4	Huntley	C5
Acton Turville	E10	Boddington	F4	Coln St. Dennis	H6	Eyford	J4	Iron Acton	C9
Adlestrop	K4	Bourton-on-the-Hill	J3	Compton Abdale	H5	Fairford	J7	Kemble	G8
Alderley	D9	Bourton-on-the-Hill	J3	Compton	B10	Farmcote	H4	Kempley	C4
Alderton	G3	Water	J5	Greenfield	B10	Farmington	J5	Kempford	J8
Almondsbury	B9	Boxwell	E8	Condicote	J4	Filton	B10	Kingscote	E8
Alstone	G3	Bream	B7	Corse	D4	Flaxley	C5	King Stanley	E7
Alveston	B9	Brimsfield	F6	Cowley	G6	Fromthampton	E3	Kingswood (Bristol)	C11
Alvington	B7	Bristol	B11	Cranham	F6	Frompton	C10	Kingswood (Charfield)	D8
Amberley	B9	Broadwell	F5	Cromhall	C9	Cotterell	D6	Lancut	A8
Ampney Crucis	H7	Brockworth	D3	Cutstun	H4	Severn	D6	Lasborough	H8
Ampney St. Mary	H7	Bromsborrow	D3	Daglingworth	G7	Fretherne	D7	Lassington	E5
Ampney St. Peter	H7	Brookthorpe	E6	Daylesford	K4	Procter	E5	Lechlade	K7
Arlingham	C6	Buckland	H3	Deerhurst	E3	Gloucester	E5	Leckhampton	F4
Ashchurch	F3	Bulley	D5	Didbrook	H9	Great Barrington	K6	Leigh	F5
Ashleworth	E4	Cam	D7	Didmarton	E3	Great Rissington	J5	Leighton	E9
Ashley	F8	Chaceley	E4	Dodington	D10	Great Washbourne	G3	Lemington	K3
Aston Blank	J5	Chalford	F7	Dowdeswell	G5	Great Witcombe	F6	Leonard Stanley	D7
Aston-sub-Edge	B9	Charlton Abbots	G4	Down Ampney	E5	Guiting Power	H4	Little Barrington	K6
Aust	E2	Charlton Kings	G5	Doynton	H7	Hailes	H4	Little Dean	C6
Avening	C8	Chavenage	E8	Driffield	G3	Hampnett	H5	Little Rissington	J5
Awre	E6	Chedworth	H6	Dumbistoun	G6	Hanham	B11	Little Sodbury	D9
Aylburton	B7	Cheltenham	F5	Dumbistoun	G6	Hardwicke	D6	Littleton-on-Severn	B9
Badgeworth	F5	Cheriton	F7	Dumbistoun	G6	Harescombe	E6	Little Washbourne	G3
Badminton	E9	Chipping Campden	J3	Dursley	D8	Haresfield	E6	Longborough	J4
Bagendon	G7	Chipping Sodbury	D10	Dymock	C3	Harnhill	H7	Longhope	C5
Barnsley	H7	Churcham	D5	Dyrham	D10	Hartpury	D4	Long Newton	F8
Barnwood	E5	Churchdown	F5	Eastington	D7	Hathorpe	J7	Longney	D6
Batsford	J3	Church Icomb	K5	Eastleach	D7	Hawkesbury	D9	Lower Slaughter	J5
Baunton	G7	Cinderford	C6	Martin	J5	Hawling	H5	Lower Swell	J4
Beachley	A8	Cirencester	G7	Eastleach Turville	K7	Hazleton	H5	Lydney	B7
Berkeley	C7	Clapton	J5	Ebrington	J2	Hempstead	E5	Maisemore	E5
Beverstone	E8	Clearwell	B6	Edgeworth	F7	Henbury	A10	Mangotsfield	C10
Bibury	H6	Coaley	D7	Elberton	B9	Hewelsfield	B7	Marshfield	D11
Bishop's Cleeve	G4	Coates	G7	Elkstone	G8	Hingham	C8	Matson	E5
Bisley	F7	Coberley	D11	Elmore	B6	Hill	E8	Meysey Hampton	H7
Bitton	C11	Cold Ashton	B6	Elmstone	G6	Horsley	E8	Mickleton	J2
Blaision	C5	Coleford	B6		F4	Horton	D9	Minchinhampton	E7
Blakeney	C6	Colesborne	G6						

Minsterworth D5
Miserden F6
Mitcheldean C5
Moreton-in-Marsh K3
Moreton Valence D6
Nailsworth E7
Naunton H4
Newent C4
Newington E8
Bagpath A6
Newland A6
Newnham C6
North Cerney G6
Northleach H6
North Nibley D8
Northwick A9
Nymgrove H5
Nymphsfield E7
Oddington K4
Oldbury-on-the-Hill E9
Oldbury-on-Severn B8
Oldland C11
Old Sodbury D10
Olveston B9
Oxwipen E8
Oxenhall C4
Oxenton F3
Oxworth D8

Painswick E6
Pauntley D4
Piling A9
Pitchcombe E6
Poole Keynes G8
Postlip G4
Poultion H7
Prestbury G4
Preston H7
Preston (Dymock) C3
Pucklechurch C10
Quedgeley E6
Quenington J7
Randoek E7
Rangeworthy C9
Redmarley D4
D'Abitot D4
Rendcomb G6
Rodborough E7
Rodmorton F8
Ruardean B5
Rudford D5
St. Briavels A7
Saintbury H2
Salperton H5
Sandhurst E4
Sapperton F7
Saul D6
Selsley E7

Sevenhampton G5
Sharpness C7
Sherborne J6
Shipton Moyne F9
Shipton Oliffe H5
Shipton Sollars G5
Shirehampton A10
Shorncombe G8
Shurdington F5
Siddington G7
Siston C10
Slimbridge D7
Snowhill H3
Somerford Keynes G8
Southam G4
South Cerney H8
Southrop K7
Standish E6
Stanley Pontlarge G4
Stanton H3
Stanway H3
Staunton A6
Staunton (Hasfield) D4
Staverton F4
Stinchcombe D8
Stoke Gifford B10
Stoke Orchard C8
Stone F4
Stonehouse E7
Stowell H6

Stow-on-the-Wold J4
Stratton G7
Stroud E7
Sudeley G4
Swindon F4
Syde F6
Tarlton G7
Taynton D5
Teddington F3
Temple Guiting H4
Tetbury F8
Tewkesbury F3
Thornbury C9
Tibberton D5
Tidenham A8
Tirley E4
Toddington G3
Todenham K3
Tortmarton D10
Tortworth C8
Tredington F4
Turkdean H5
Twynning F3
Tytherington C9

Wapley C10
Westbury-on-Severn C6
Westbury-on-Trym B10
Westcote K5
Westerleigh C10
West Littleton D10
Weston Birt E9
Weston-sub-Edge J2
Whaddon E8
Whitminster D6
Whittington G5
Wickwar D9
Willessey H2
Winchcomb G4
Windrush J6
Winson H6
Winstone G6
Winterbourne C10
Withington G5
Woodchester E7
Woolaston B7
Woolstone F4
Wormington G3
Wotton-under-Edge D8
Wyke Rissington J5
Yarnworth H6
Yate C9

HAMPSHIRE—KEY TO THE MAP ON PAGE 7116

Abbots Ann D4
Aldershot G3
Alresford L5
Alton G5
Alverstoke H4
Ampfield H9
Amport D6
Andover E3
Ashe G3
Ashley E5
Ashmansworth E2
Avington F5
Barton Stacey G4
Basing H2
Basingstoke H2
Baughurst G1
Beaulieu E9
Bedhampton J8
Bentley K3
Bentworth H4
Bickton B8
Bighton H5
Binsted K4
Bishop's Sutton G7
Bishop's Waltham H5
Blackmoor K5
Boarhunt H8
Bolder D9
Botley G7
Bournemouth A10
Bramdean H6
Bramley H2
Bramshaw D7
Bramshott L5
Bransgore C9
Breamore B7
Brockenhurst D9
Broughton D5
Brown Candover G4
Bucklers Hard E9
Bullington F4
Burghclere F2
Buriton J6
Burley C9
Bursledon F8
Burton B10

Curdridge D4
Damerham G7
Deane B7
Dibden G3
Dogmersfield E8
Droxford K2
Dummer H7
Durley G3
East Dean D6
Eastleigh F7
East Meon J6
Easton G5
East Tisted J5
East Wellow D7
East Woldham E1
Eldon J4
Eling E5
Ellingham E8
Elvetham B8
Empshott K2
Eversley K5
Exbury K1
Exton F9
Facombe E2
Fareham G8
Farleigh Wallop H3
Farley H6
Chamberlayne E6
Farrington J8
Farnborough L2
Fawley F9
Fordingbridge K2
Freefolk B7
Froxfield F3
Froyle J6
Fyfield J4
Godsfield D3
Goodworth H4
Clatford E4
Gosport H9
Grateley D4
Greatham K5
Greywell J3

Hinton Ampner G7
Holybourne B7
Hordle G3
Houghton E8
Hound K2
Hursley H7
Hurstbourne Priors F3
Hurstbourne G7
Tarrant E2
Islesly B8
Idsworth J7
Itchen F8
Itchen Abbas G5
Itchen Stoke G5
Kimpton D3
Kingsclere G2
King's Somborne E5
Knights Enham E3
Laverstoke F3
Leckford E4
Linkenholt E2
Liss K5
Litchfield F2
Little Somborne E5
Littleton F5
Longstock F3
Long Sutton E4
Lymington J3
Lyndhurst D10
Mapledurwell D8
Martyr Worthy J5
Mattingley F3
Medstead J2
Medstead H4
Meonstoke H7
Micheldever G4
Michelmersham E6
Milford-on-Sea D10
Milton C10
Minstead D8
Monk Sherborne H2
Monxton H2
Mottisfont D3
Mudeford D6
Nately Scures J2
Nether Wallop J2
Netley F8
Newnham J2
Newton Valence J5
North Baddesley E6
Northampton G4
North Stoneham F7
North Waltham G3

Pamber H6
Petersfield J4
Plaitford D10
Portchester D5
Portsmouth F8
Preston Candover F3
Priors Dean H4
Privett J5
Quarley J6
Redbridge D4
Ringwood E7
Rockbourne B8
Romsey B7
Rotherwick E6
Rowner J2
Rownams G9
Royden E7
St. Leonards D9
St. Mary Bourne E9
Selborne E3
Sherborne St John J5
Sherfield-on-Loddon H2
Silchester J2
Slackstead H1
Soberton E6
Sopley H7
Southampton B9
Southsea E8
South H9
Warnborough J3
Southwick J3
Spasholt H8
Steep F5
Stenton J6
Stockbridge G3
Stoke Charity E5
Stratfield Saye F4
Stratfield Turgis J1
Sway D9
Swaythling F7
Sydmonton H2
Tadley F1
Tangley D2
Thruxton D3
Titchborne D3
Timbury G5
Titchfield E6
Tufton G8
Tunworth F3
Twyford J6

Weston Patrick J3
West Tisted H5
West Worldham J4
Weyhill D3
Wherwell E4
Whitchurch F3
Whitsbury B7
Wickham G8
Wield H4
Winchester F5
Winchfield K2
Wolverton G2
Wootton F4
Woodcote F2
Woodgreen B7
Wootton Hill E1
Wootton St. Lawrence G2
Yateley K1

ISLE OF WIGHT

Arreton N9
Bembridge P8
Binstead O8
Bonchurch O10
Brading O9
Brightstone M9
Brook M9
Calbourne M9
Carisbrooke N8
Chale N10
Cowes N7
Freshwater L9
Gatcombe N9
Godshill N9
Kingston N9
Mottistone M9
Newchurch O9
Newport N8
Newtown M8
Niton N10
Northwood N8
Osborne N8
Ryde O8
St. Helen's O8
Sandown O9
Shalfleet M8
Shanklin O9
Shide N8
Shorwell M9
Thorley L8
Ventnor O10
Whippingham N8
Whitwell N10
Wootton N8
Yarmouth L8
Yaverland O9

Canterton D7
Catherington J7
Chalton J7
Chandler's Ford F6
Charford C7
Cawton J4
Cheriton G5
Chilbolton E4
Chilcomb F5
Chilton Candover H4
Christchurch B10
Clanfield J7
Colemore F6
Compton H6
Corhampton E5
Crawley E5
Crondall K3

Hale C7
Hamble F8
Hambleton H7
Hannington G2
Harbridge B8
Hartley Mauditt J4
Hartley Westpall J2
Hartley Wintney K2
Havant J8
Hayling Island J9
Headbourne J1
Worthy F5
Heckfield J1
Hengistbury Head C10
Herriard H3
Highclere F1
Highcliffe C10

Nursling E7
Oakley G3
Odiham J3
Otterbourne F6
Overton G3
Over Wallop D4
Ovington G5

Upham G6
Upper Clatford J2
Upton Grey E3
Vernham Dean D2
Warblington J8
Warnford H6
Weeke F5
West Meon H6

HEREFORDSHIRE—KEY TO THE MAP ON PAGE 7151

A bbey Dore	C6	Coddington	G5	Hope-under-	D4	Michaelchurch	B6	Storridge	G4
A conbury	D6	Collington	F3	Dinmore	E6	Escley	B6	Stretford	C3
A cton Beauchamp	F4	Colwall	G5	How Caple	D3	Middleton-on-the-	D2	Stretton Grandison	F5
A llensmore	D6	Cradley	G4	Humber	A4	Hill	D2	Stretton Sugwas	D5
A lmeley	B4	Craswall	A6	Huntington	C5	Moccas	B5	Sutton St. Michael	D4
A shpton	F5	Credenhill	D5	K enchester	C7	Monkland	D3	Sutton St. Nicholas	E5
A ston	D1	Croft	C2	Kenderchurch	C7	Monnington	C5		
A ston Ingham	F7	Cusop	A5	Kentchurch	C7	Mordiford	E8	T arrington	F5
A venbury	F4	D ewsall	D6	Kilpeck	C6	Moreton Jeffreys	E4	Tedstone	
A ylton	C5	Dilwyn	C3	Kimbolton	D3	Moreton-on-Lugg	D5	Delamere	F3
A ymestrey	C2	Dinedor	E6	King's Caple	E7	Much Birch	D6	Tedstone Wafer	F3
		Dinmore	D4	Kingsland	C3	Much Cowarne	E4	Thornbury	E3
B acton	C6	Docklow	E3	King's Pyon	C4	Much Dewchurch	D6	Throxton	C6
B allingham	D4	Donnington	G6	Kingstone	C6	Much Marcle	F6	Titley	B3
B irley	F4	Dormington	E5	Kington	B3	Munsley	F5	Tretire	D7
B ishops Frome	C5	Dorstone	B5	Kinnersley	B4	N orton Canon	C4	Turnstone	B6
B ishopstone	E8	Downton	C1	Kinsham	B2			Tyberton	C5
B ishopswood	B5	Dulas	C7	Knill	B3				
B lakemere	D4	E ardisland	C3	Laysters	E2	O cle Pychard	E4	U llingswick	E4
B odenham	E6	Eardisley	B4	Lea	F7	Orcop	D7	Upper Sapey	F2
B olstone	F5	Eastnor	G6	Ledbury	G5	Orleton	D2	Upton Bishop	F7
B osbury	E7	Eaton Bishop	C5	Leintall Earls	C2	Pembridge	C3	Vowchurch	C6
B rampton Abbotts	C1	Edvin Loach	F3	Leintall Starkes	C2	Pencombe	E4		
B rampton Bryan	E3	Edvin Ralph	D2	Leintwardine	C1	Pencoyd	D7	W alford	E8
B redenbury	B5	Elton	F3	Leominster	D3	Peterchurch	B5	Walterstone	B7
B rewardine	D5	Evesbatch	F4	Letton	B4	Peterstow	E7	Wellington	D4
B reinton	E7	Ewyas Harold	C7	Lingen	B2	Pipe and Lyde	D5	Welsh Bicknor	E8
B ridstow	C5	E ye	D2	Linton	F7	Pixley	F5	Welsh Newton	D8
B ridge Sollers	A4	Eyton	D3	Little Cowarne	E4	Preston-on-Wye	C5	Weobley	C4
B rilley	D2			Little Dewchurch	D6	Preston Wynne	E3	Westhide	E5
B rimfield	C5	F awley	E6	Little Hereford	E2	Puddleston	F6	Weston Beggard	E5
B rinsof	B5	Felton	E4	Little Marcle	C7	Putley	D2	Penyard	F7
B robury	E6	Fownhope	E6	Liandlino	D7	R ichards Castle	E7	Whitbourne	G3
B rockhampton	F3	Foy	E7	Liandgarren	D8	Ross	C7	Whitchurch	E8
B rockhampton	F3	G anarew	D8	Lianrothal	D8	Rowlstone	B6	Whitney	A4
B romyard	D6	Garway	E8	Lianwarne	D7	S t. Margaret's	B6	Wigmore	C2
B ullingham	D5	Goodrich	E3	Longtown	C2	St. Weonards	D7	Wilton	E7
B urghill	C1	Grendon Bishop	E5	Lucton	B5	Sarnesfield	C4	Winforton	B4
B urrington	D6	H ampton Bishop	E5	Lugwardine	E3	Sellack	E7	Withington	E5
B yford	C5	Harewood	E7	Lyonshall	B5	Shobdon	C3	Wolverlow	F3
		Hatfield	E3	M adley	C5	Sollers Hope	E6	Woolhope	E6
C allow	D6	Hentland	E7	Mansell	C5	Stanford Bishop	F4	Wormbridge	C6
C anon Frome	F5	Hereford	D5	Gamage	C5	Stapleton	B2	Wormsley	C4
C anon Pyon	C4	Hoarwithy	E3	Mansell Lacey	D4	Staunton-on-Arrow	C3	Y arkhill	E5
C astle Frome	F5	Holmer	D5	Marden	G5	Staunton-on-Wye	C5	Yarpole	D2
C leghonger	A5	Holme Lacey	E6	Mathon	D4	Stoke Edith	F5	Yatton	F6
C lifford	B7	Hope Mansel	F8	Michaelchurch	D7	Stoke Lacy	E4	Yazor	C4
C lodock						Stoke Prior	D3		

HERTFORDSHIRE—KEY TO THE MAP ON PAGE 7127

A bbots Langley	E6	C aldeote	G1	Hertingfordbury	G5	Much Hadham	J4	Stanstead Abbots	H5
A lbury	J3	Cheshunt	H6	Hexton	E2	N ettleden	D5	Stanstead St	
A ldbury	C5	Chipperley	D6	High Cross	H4	Newnham	G1	Margaret	H5
A ldenham	E6	Chorley Wood	D7	Hinxworth	G1	Northam	G6	Stapleford	G4
A mwell	H5	Clothall	G2	Hitchin	F2	Northchurch	C6	Stevenage	G3
A nstey	J2	Codicote	F4	Hoddesdon	H5	North Mims	F6	Stocking Pelham	J2
A rdeley	G3	Colemans Green	F5	Holwell	F2	Norton	F2	T ewin	G4
A shwell	G1	Colney Heath	F5	Hunsdon	J4	O ffley	E3	Therfield	H1
A spenden	H3	Cottered	H2	Ickleford	F2	O xhey	E7	Thorley	K4
A ston	G3	Croxley Green	E7	Ipplolitts	F3	P irton	E2	Throcking	H2
A yot St. Lawrence	G4	Datchworth	G4	K elshall	H2	Preston	F3	Thundridge	H4
A yot St. Peter	F4	Digswell	G4	Kimpton	F4	Puckeridge	H3	Totteridge	G7
		E ast Barnet	G7	King's Langley	D6	Puttenham	B3	Tring	C5
B aldock	G2	Eastwick	J5	King's Walden	F3	R adlett	F6	W alkern	G3
B arkway	H2	Elstree	F7	Knebworth	F4	Radwell	G2	Wallington	G2
B arley	J1	Essendon	G5	L angleybury	E6	Redbourn	E5	Waltham Cross	H6
B arnet	G7	F lamstead	E4	Lemsford	F5	Reed	H2	Ware	H4
B ayford	H5	Flaunden	D6	Letchmore Heath	F2	Rickmansworth	D7	Waterford	H7
B engeo	H4	Furneux Pelham	J3	Letchworth	F2	Ridge	F6	Watford	E4
B enington	G3	G ilston	J4	Leverstock Green	E5	Royston	H1	Watton	G4
B erkhamsted	C5	Goffs Oak	H6	Lilley	E3	Rushden	G2	Welwyn	G4
B ishop's Stortford	K3	Graveley	G3	Little Berkhamsted	G5	S acombe	H4	Welwyn Garden	
B ovingdon	D6	Great Gaddesden	D5	Little Gaddesden	C4	St. Albans	E5	City	G5
B oxmoor	D5	Great Hornead	J2	Little Hadham	J3	St. Paul's Walden	H2	Westmill	H3
B ramfield	G4	Great Munden	H3	Little Hornead	J3	Sandon	F5	Weston	G2
B raughing	J2	Great Wymondley	F3	Little Munden	H3	Sandridge	H2	Wheatthampstead	F4
B rent Pelham	H5	H adley	G6	Little Wymondley	F3	Sarratt	D6	Widford	J5
B roxbourne	H2	Harpenden	E4	London Colney	F6	Sawbridgeworth	K4	Wigginton	C4
B uckland	H2	Hatfield	F5	Long Marston	B4	Shenley	F6	Willian	F2
B untingford	E7	Hemel Hempstead	D5	M arkyate	D4	Shephall	G3	Wormley	H5
B ushey	G2	Hertford	H5	Meesden	J2	Standon	J3	Wyddial	H2
B ygrave									

HUNTINGDONSHIRE—KEY TO THE MAP ON PAGE 7135

A bbotsley	C6	Buckden	C4	Coppingford	B3	F arcet	C1	Great Paxton	C5
A bbotts Ripton	C3	Buckworth	B3	Covington	A4	F en Stanton	D4	Great Staughton	B5
A lconbury	C3	Bury	D2	D enton	B2	Fletton	C1	Great Stukeley	C4
A lwalton	B1	Bythorn	A3	Diddington	C5	Folksworth	B2	H addon	B1
		C aldeote	B2	E aston	B4	G lutton	B2	Hail Weston	B5
B arham	E4	Catworth	B4	Ellington	B4	Godmanchester	C4	Hamerton	B3
B rampton	C4	Chesterton	B1	E lton	B1	Graham	B4	Hartford	D4
B rinton	B3	Colne	E3	Eynesbury	C6	Great Gidding	B3	Hemingford	
B roughton	D3	Conington	C2			Great Gransden	D6	Abbots	D4

Hemingford Grey	D4	Little Gidding	B3	Old Weston	B3	Southoe	C5	Warboys	D3
Hilton	D5	Little Paxton	C5	Orton Longueville	C1	Spaldwick	B4	Water Newton	B1
Holme	C2	Little Raveley	D3	Orton Waterville	B1	Stanground	C1	Winwick	B3
Holywell	E4	Little Stukeley	C3			Steeple Gidding	B3	Wistow	D3
Houghton	D4	Long Stow	B4	Pidley	D3	Stibbington	B1	Woodhurst	D3
Huntingdon	C4					Stilton	B2	Woodstone	C1
Keyston	A4	Molesworth	A3	Ramsey	D2			Wood Walton	C3
Kimbolton	B4	Morborne	B1			Tilbrook	A4	Woolley	B4
Kings Ripton	D3	Offord Cluny	C5	St. Ives	D4	Toseland	C5	Wyton	D4
Leighton		Offord Darcy	C5	St. Neots	C5				
Bromswold	B4	Old Hurst	D3	Sawtry	C2	Upton	C3	Yaxley	C1
				Somersham	E3	Upwood	D3	Yelling	D5

KENT—KEY TO THE MAP ON PAGE 7110

Acrise	L6	Cooling	F2	Herne	L3	Newington	G3	Smarden	G6
Addington	E4	Cowden	B6	Herne Bay	L3	Newington-		Smeth	K6
Adisham	M5	Cranbrook	F7	Hernhill	K4	by-Hythe	L7	Snargate	J8
Aldington	K7	Crayford	C2	Hever	B6	Newnham	H4	Snave	J7
Alkham	M6	Crockham Hill	B5	Higham	E2	New Romney	K8	Snodland	E4
Allington	F4	Cudham	B4	High Halden	H7	Nonington	M5	Southborough	D6
Appledore	H8	Cuxton	E3	High Halstow	F2	Northbourne	N5	Southfleet	D2
Ash (Sandwich)	M4			Hildenborough	C5	North Cray	B2	Speldhurst	C6
Ash (Wrotham)	D3	Darenth	C2	Hillborough	L3	Northfleet	D2	Stalisfield	H5
Ashford	J6	Dartford	C2	Hinxhill	J6	Norton	H4	Stanford	K6
Ashurst	C6	Deal	N5	Hoath	L3	Nurstead	D3	Stanstead	D4
Aylesford	F4	Denton	L5	Hollingbourne	G4			Staple	M4
		Detling	F4	Hoo All Hallows	F2	Oare	J3	Staplehurst	F6
Badlesmere	J4	Ditton	E4	Hoo St. Mary	F2	Offham	E4	Staplehurst	G4
Bapchild	H3	Doddington	H4	Hoo St. Werburgh	F2	Old Romney	J8	Stodmarsh	M4
Barfreston	M5	Dover	N6	Horsmonden	E6	Orlestone	J7	Stoke	G2
Barham	L5	Downe	B4	Horton Kirby	C3	Orpington	B3	Stone	D2
Barming	E4	Dungeness	K9	Hothfield	H6	Ospringe	J4	Stone-in-Oxney	H8
Basted	D4	Dunkirk	K4	Hougham	M6	Otford	C4	Stourmouth	M3
Beardst	F4	Dymchurch	K8	Hucking	G4	Otham	F4	Stouting	K6
Beckenham	A3			Hunton	E5	Otterden	H4	Strood	F3
Bekesbourne	L4	Eastchurch	J2	Hythe	L7	Paddlesworth	L6	Sturry	L4
Beltring	E5	East Farleigh	F5			Patricxbourne	L4	Sundridge	B4
Benenden	F7	East Langdon	N5	Jackham	M4	Pauls Cray	B3	Sutton-at-Hone	C3
Bethersden	H6	East Malling	E4	Ide Hill	B5	Pembury	D6	Sutton-by-Dover	N5
Betteshanger	N5	East Peckham	E5	Ifield	E3	Penenden Heath	F4	Sutton Valence	G5
Bickley	C2	Eastry	N4	Igham	D4	Penshurst	C6	Swanley	C3
Bidborough	G6	East Sutton	G5	Ivychurch	J8	Petham	K5	Swanscombe	D2
Biddenden	C4	Eastwell	J5	Iwade	H3	Petts Wood	B3	Swingfield	M6
Bilsington	G6	East Wickham	B2	Kemsing	C4	Platt	D4	Temple Ewell	M6
Birchington	J7	Ebbfleet	N3	Kenardington	J7	Plaxtol	D5	Tenterden	G7
Birling	N3	Ebony	H8	Kennington	J6	Pluckley	H6	Teston	E5
Bishopsbourne	E4	Edenbridge	B6	Keston	B3	Postling	L6	Teynham	H3
Bobbing	G3	Egerton	H5	Kiltdown	E7	Preston-		Thanington	K4
Bonnington	K7	Elham	L6	Kingsdown	N5	by-Faversham	J4	Throwley	J4
Borden	G3	Elmsted	K6	Kingsnorth	J6	Preston-		Thurnham	F4
Borstal	F3	Erith	C2	Kingston	L5	by-Wingham	M4	Tilmanstone	N5
Boughton Aluph	G5	Eynsford	C3	Knockholt	B4			Tonbridge	D6
Boughton Malherbe	J5	Eythorne	M5	Knowlton	M5	Queenborough	H2	Tonge	H3
Boughton		Fairfield	H8	Lamberhurst	E7	Rainham	G3	Toys Hill	B5
Monchelsea	F5	Farnborough	B3	Langley	F5	Ramsgate	O3	Trottscliffe	D4
Boughton-under-		Farningham	C3	Leaveland	J5	Reculver	M3	Tudeley	D6
Blean	J4	Faversham	J4	Leeds	G5	Richborough	N4	Tunbridge Wells	D6
Boxley	F4	Fawkham	D3	Leigh	C5	River	D3	Tunstall	H4
Brabourne	K6	Folkestone	M7	Lenham	H5	Ripple	N5	Ucombe	G5
Brasted	B4	Foots Cray	C6	Leybourne	E4	Riverhead	N5	Upchurch	G3
Bredgar	G4	Fordcombe	L4	Leydown	J2	Rochester	F3	Upper Hardres	L5
Bredhurst	F3	Fordwich	L4	Linton	F5	Rodmersham	H4	Waldershare	M5
Brenchley	E6	Four Elms	B5	Littlebourne	L4	Rolvenden	G7	Walmer	N5
Brenzett	J8	Frindsbury	F3	Little Chart	H6	Ruckinge	J7	Waltham	K5
Bridge	L4	Frinstead	G4	Longfield	D3	Ryars	E4	Warden Point	J2
Broadstairs	O3	Frittenden	G6	Loose	F5	St. Margaret-at-		Warehorne	J7
Bromley	A3	Gadshill	E2	Lower Halstow	G3	Cliffe	N6	Wateringbury	E5
Brook	K6	Galley Hill	D2	Luddenham	J3	St. Mary Cray	B3	Westbere	L4
Brookland	J8	Gillingham	F3	Luddesdown	E3	St. Mary-in-Marsh	K8	Westenhanger	K7
Broomfield	L3	Godmersham	K5	Lullingstone	C3	St. Nicholas-at		Westerham	B5
Buckland	N6	Goodnestone-		Lydd	J9	Wade	M3	West Farleigh	E5
Buckland-		by-Adisham	M4	Lyminge	L6	St. Peters in Thanet	N3	West Malling	E4
by-Faversham	J3	Goodnestone-		Lynsted	K7	Saltwood	F4	West Peckham	D5
Burham	E4	by-Faversham	J4			Sandgate	L7	Westwell	J5
Burmarsh	K7	Goudhurst	E7	Maidstone	F4	Sandhurst	F8	West Wickham	A3
Canterbury	L4	Grain	G2	Maplescombe	C3	Sandwich	N4	Westwood	D3
Capel	D6	Graveney	D3	Marden	F6	Sarre	M3	Whitfield	N5
Capel-le-Ferne	M6	Gravesend	J2	Margate	N2	Seal	C4	Whitstable	K3
Chalk	E2	Great Chart	J6	Meopham	D3	Selling	J4	Wickhambreux	M4
Challock	J5	Greenhithe	D2	Mereworth	E5	Selling	K6	Willesborough	J6
Charing	H5	Hoochbridge	C7	Mersham	J6	Sevenoaks	H3	Wilmington	C2
Charham	K4	Haddington	L4	Milsted	H4	Sevington	H2	Wingham	M4
Chatham	F3	Hadlow	D5	Milton Regis	H3	Shadoxhurst	J7	Wittersham	H8
Chelsfield	B3	Halling	E3	Minster (Sheppey)	H2	Sheerness	H2	Woodchurch	H7
Cheriton	L7	Ham	N4	Minster (Thanet)	N3	Sheldwich	J4	Woodnesbrough	N4
Chevening	B4	Harbledown	K4	Molash	J5	Shepherdswell	M5	Wootton	M5
Chiddingstone	C6	Harrietsham	G5	Mongeham	N5	Shipbourne	D5	Wormshill	G4
Chilham	K5	Hartley	D3	Monks Horton	K6	Shoreham	C4	Wrotham	E3
Chislehurst	M5	Hartlip	G3	Monkton	M3	Shorne	E2	Wyche	H4
Chislehurst	B3	Harty	J3	Murston	H3	Sidcup	B2	Wye	K5
Chislehurst	M3	Hastingleigh	K6	Nackington	L4	Sissinghurst	F7	Yalding	E5
Cliffe	F2	Hawkhurst	F8	Nettlestead	E5	Sittingbourne	H3		
Cobham	E3	Hayes	A3	Newchurch	K7	Smallhythe	H7		
Coldred	M5	Headcorn	G6	Newenden	G8				

LANCASHIRE—KEY TO THE MAP ON PAGE 7144

A	Accrington	G9	Chorley	E11	Great Crosby	A13	Melling	H2	Seathwaite
	Adlington	E11	Chorlton-cum-		Great Harwood	G9	(Lancaster)	E4	Sefton
	Aldingham	H5	Hardy	H14	Gressingham	E4	Mellor	F9	Shaw
	Allithwaite	K4	Church	G9	Grimstargh	E9	Middleton	H12	Silverdale
	Altcar	A12	Churchtown	C7			Millinrow	J11	Singleton
	Altham	G9	Cloughton	D5	H	C15	Morecambe	C5	Skelmersdale
	Arkholme	E4	Cloughton-on-		Hale	C15	Much Hoole	K13	Smallbridge
	Ashton-in-		Brock	D8	Halewood	B12		C10	Southport
	Makerfield	E13	Clayton-le-Moors	G9	Halsall	D5	Nelson	H8	Staveley
	Ashton-under-		Clitheroe	G8	Halton	G12	Newchurch	H8	Stonhyhurst
	Lyne	J13	Cockerham	C6	Harwood	G10	Newton-	E14	Stretford
	Astley	F13	Colne	J8	Haslingden	J3	Makerfield	H14	Swinton
	Atherton	F13	Colton	J3	Haverthwaite	J2	Northenden	J12	Tarleton
	Aughton	B12	Coniston	J2	Hawkshead	E13		C12	Thornham
			Coppull	D11	Haydock	B5		G9	Thorntham
	Backbarrow	J3	Croston	D11	Heysham	H11	O	D4	Turton
	Bacup	H10	Culceth	F14	Heywood	J11	Ormskirk	C6	Tyldesley
	Baguley	H14			High Crompton	E12	Oswaldtwistle	D6	Uiverston
	Bamber Bridge	D10	D	D12	Hindley	E10	Over Kellet	H6	Upholland
	Bardsea	J5	Dalton		Hoghton	G11	Overton	F10	Urmston
	Bardsley	J3	Furness	H5	Holcombe	H9	Over Wyresdale	C14	Urswick
	Barnacre	D7	Darwen	F10	Holme	E4		D5	Walckden
	Barrowford	H8	Deane	F12	Hornby	E11	Padiham	G12	Walton-le-Dale
	Barrow-in-		Dendron	H5	Horwich	J13	Parbold	D14	Walton-on-the-
	Furness	G5	Denton	J13	Hurst	H9	Pendlebury	H10	Hill
	Barton	D8	Didsbury	H14	Hurstwood	C14	Pennington	B9	Wardle
	Bickerstaffe	C12	Ditton	D14	Huyton	A12	Pennwortham	F8	Warrington
	Billinge	D13	Downham	G7	Ince Blundell	F14	Piel Island	G12	Warton
	Bispham	A8	Droylsden	J13	Irlam	H13	Pleasington	H8	Waterloo
	Blackburn	F9	Earlestown	E13	Kearsley	H13	Poulton-le-Fylde	F9	West Derby
	Blackpool	A8	East Crompton	J12	Kersal	C13	Prescot	E11	Westhoughton
	Blawith	H3	Eccles	G13	Kirkby	H4	Prestwich	J11	Whalley
	Bleasdale	E7	Eccleston	D11	Kirkby Ireleth	C9		H8	Whitefield
	Bolton	F12	Eccleston (St.	D13	Kirkham	C13	Quernmore	C12	Whittington
	Bolton-le-Sands	C5	Helens)	D6	Knossley	C5		J11	Whittle-le-Woods
	Bootle	B13	Ellel	D10	Lancaster	F9	R	C12	Whitworth
	Borwick	D4	Euxton	J10	Langho	C12	Rainhill	H10	Widnes
	Bradshaw	G11	Facit	J12	Lathom	F13	Ramsbottom	F8	Wigan
	Bretherton	C10	Failssworth	G12	Lees	E13	Rawtenstall	D13	Winwick
	Brierfield	H8	Farnworth	D14	Leigh	C9	Ribby	H13	Woodplumpton
	Brindle	E10	Farnworth	D8	Leysland	B10	Ribchester	C13	Worsley
	Broughton	D9	(Widnes)	H9	Lindale	B13	Ringley	H13	Wycoller
	Broughton-in-		Fence	D9	Littleborough	H13	Rishton	E9	Yealand Conyers
	Furness	H3	Fernyhalgh	K4	Little Hulton	F12	Rivington	B11	
	Burnley	H9	Field Broughton	J3	Little Lever	G12	Rochdale		
	Burscough	C11	Finsthwaite	B7	Little Mitton	F8	Roughlee		
	Bury	H12	Fleetwood	G13	Liverpool	B14	Royton		
			K4	K4	Longridge	E8	Rufford		
C	Carnforth	D4	Flookburgh	A12	Lowton	E13	Rusland		
	Cartmel	K4	Formby	J8	Lund	C9	St. Anne's-on-Sea		
	Cartmel Fell	K3	Foulridge	J8	Lydiat	B12	St. Helens		
	Caton	J12	Freckleton	D9	Lytham	B10	St. Michael's-on-		
	Chadderton	D11	Fulwood	D7	Maghull	B13	Wyre		
	Charnock Richard	C14	G	D7	Manchester	H13	Salford		
	Childwall	E7	Grange-over-	K4	Melling	B13	Samlesbury		
	Chipping		Sands				Scarbrick		

LEICESTERSHIRE—KEY TO THE MAP ON PAGE 7134

A	b-Kettleby	F3	Buckminster	H3	Frisby-on-the-	B5	Ilstock	G7	Nevill Holt
	Allexton	G6	Burbage	C7	Wreak	F4	Ilston-on-the-	C6	Newbold Verdon
	Anstey	D5	Burrough-on-the-		Frowlesworth	C7	Hill	F6	Newton Harcourt
	Appleby Magna	A5	Hill	G5	G	F5	K	C3	Newtown Linford
	Appleby Parva	A5	Burton Lazars	G4	Gaddeby	C4	Kibworth	F7	Normanton-le-
	Arnesby	E7	Burton Overy	F6	Garmthorpe	H4	Kilby	E7	Heath
	Asfordby	F4			Gilmorton	D8	Kirby Bellars	F4	North Kilworth
	Ashby-de-la-		Carlton Curliue	F6	Glenfield	D5	Kirby Muxloe	D6	Norton-by-Galby
	Zouch	B4	Castle	C3	Glen Parva	D6	Kirkby Mallory	C6	Norton-juxta-
	Ashby Folville-	F5	Donington	D9	Glooston	G7	Knaptoft	E7	Twycross
	Ashby Parva	D7	Catthorpe	G3	Goadby Marwood	G3	Knighon	E6	Noseley
	Aston Flamville	C7	Chadwell	F7	Great Bowden	F7	Knippton	G2	Oadby
	Aylestone	D6	Church Langton	C8	Great Dalby	F4		E7	Old Dalby
			Coalville	G4	Great Easton	H7	L	G6	Orton-on-the-Hill
B	Bardon Hill	C5	Cold Overton	C5	Great Glen	E6	Launde Abbey	D6	Osgathorpe
	Barkby	E5	Coleorton	B4	Great Stretton	E6	Leicester	G4	Owston
	Barkeston	G2	Congerstone	B5	Grimston	F3	Little Dalby	C3	Packington
	Barrow-on-Soar	D4	Cosby	D7	Groby	D5	Lockington	G6	PeatlingMagna
	Barton-in-the-		Cosington	E5	Gumley	F7	Loddington	G3	Peckleton
	Beans	B5	Coston	H3	H	G6	Long Clawson	C3	Pickwell
	Barwell	C7	Cotesbach	D8	Hallaton	F2	Loughborough	D4	Plungar
	Beeby	E5	Croft	D7	Harston	H2	Lowesby	F5	Prestwold
	Belgrave	E5	Croxton Kerrial	H3	Hathern	C3	Lubenham	F8	Queeniborough
	Belton	C4	Desford	C6	Heather	B5	Lutterworth	D8	Quorn
	Belvoir Castle	G2	Diseworth	C3	Hemington	C3		B6	Ragdale
	Billesdon	F6	Dishley	D4	Higham-on-the-	B7	MarketBosworth	F8	Ratby
	Birstall	E5	Dunton Bassett	D7	Hill	C7	Market	A5	Ratcliffe Culey
	Bitteswell	D8			Hinckley	F4	Harborough	G7	Wreak
	Blaby	D6	Earl Shilton	C6	Hoby	G6	Measham	F3	Ravenstone
	Blaston	G1	East Norton	G3	Horninghold	F3	Medbourne	D8	Rearsby
	Bottesford	D6	Eastwell	H4	Hose	F6	Melton Mowbray	D4	Redmile
	Branston	G3	Edmondthorpe	C7	Houghton-on-the-	B5	Misterton	E7	Rollleston
	Braunstone	D6	Elmesthorpe	D6	Hill	E5	Mountsorrel	G2	Rotherby
	Breedon-on-the-		Enderby	E6	Hugglescote	F5	Mowsley	B5	Rothley
	Hill	B3	Evington	B7	Humberstone	E8	Muston	F3	Saddington
	Brentingby	G4	Fenny Drayton	E7	Hungerton		N		Saltby
	Bringham	H7	Foston	F7	Husbands		Nether		
	Brooksby	F4	Foxton		Bosworth		Broughton		
	Broughton Astley	D7							

Sapcote	C7	Slawston	G7	Stoughton	E6	Thringstone	C4	Walton-on-Wolds	E4
Saxby	G4	Snboston	B4	Stretton-en-le-Field	B5	Thrusington	E4	Wanlip	E5
Saxelby	F4	Somerby	G5	Sutton Cheney	A6	Thurcaston	D5	Wartnaby	F3
Scalford	E5	South Croxton	F5	Sutton-in-the-Elms	D7	Thurlaston	C6	Welham	G7
Scraptoft	E4	South Kilworth	E8	Swannington	B4	Thurmaston	E5	Whetstone	D6
Seagrave	B5	Sproxtton	H3	Sweepstone	B5	Thurnby	E6	Whitwick	C4
Shackerstone	C7	Stapleford	G4	Swinford	D9	Tilton	F5	Wigston Magna	E6
Sharnford	D8	Stapleton	C6	Swithland	D5	Tugby	G6	Willesley	A4
Shawell	E7	Stathern	G2	Syston	E5	Twycross	A6	Wistow	E7
Shearsby	A6	Staunton Harold	B4			Twyford	F5	Withcote	G5
Sheepy Magna	B6	Stockerston	H6	Theddingworth	F8	Ulverscroft		Witherley	A6
Shenton	C4	Stoke Golding	B6	Thornton	C5	Priory	C5	Woodhouse	D4
Shepshed	B6	Stonesby	G3	Thorpe Arnold	G4			Woodhouse Eaves	D4
Sibson	F4	Stoney Stanton	C7	Thorpe Langton	F7	Waltham-on-Wolds	G3	Worthington	B4
Sileby	E6	Stonton Wyville	F7	Thorpe Satchville	F5			Wymeswold	E3
Skeffington								Wymondham	H4

LINCOLNSHIRE—KEY TO THE MAP ON PAGES 7136 and 7137

Addlethorpe	L8	Carlby	E15	Gosberton	H13	Langton	H8	Quadring	H13
Alford	K7	Carlton-le-Moorland	D10	Goxhill	F2	Langton (Spilsby)	K8	Quarrington	F11
Algarkirk	H12	Carlton Scroop	D11	Grainsby	H4	Laughton	C5	Raithby	J8
Alkborough	C2	Castle Bytham	E14	Grainthorpe	J5	Lea	C6	Raithby-cum-Maltby	J6
Althorpe	C3	Castle Carlton	K6	Grasby	F4	Leadenham	D10	Rand	F7
Alvingham	J5	Caythorpe	D11	Great Coates	H3	Leasingham	E11	Redbourne	D4
Ancaster	E11	Chapel St. Leonards	M8	Greatford	F15	Legbourne	J6	Revesby	J9
Anwick	D11	Claxby	F5	Great Gonerby	D12	Lenton	E13	Riby	G3
Appleby	F3	Claypole	C11	Great Hale	G11	Leverton	K11	Rigsby	K7
Asgarby	F11	Clee	H3	Great Limber	F3	Lincoln	E8	Rippingale	F13
Ashby-cum-Fenby	H4	Cleethorpes	H3	Great Ponton	D13	Linwood	F6	Riseholme	E7
Ashby-de-la-Launde	E10	Clixby	F4	Great Steeping	K9	Little Bytham	E15	Ropsley	E13
Ashby Puerorum	J8	Coates	D7	Great Sturton	G7	Little Coates	H3	Rothwell	G4
Aslackby	F13	Coleby	E9	Greetwell	E8	Little Ponton	D13	Roughton	H9
Aswarby	F12	Colsterworth	D14	Grimoldby	K6	Londonthorpe	D12	Roxby	D2
Aubourn	D9	Congingsby	H10	Grimsby	H3	Long Sutton	K14	Ruskington	F10
Aunsby	E12	Conisholme	K5	Gunby	K8	Louth	J6	Saleby	K7
Aylesbury	G3	Corby	E14	Hacconby	F14	Ludborough	H5	Saltfleet	K5
Bag Enderby	J8	Corringham	C5	Haceby	E12	Lusby	J8	Saltfleetby All Saints	K6
Bardney	F8	Covenham	J5	Hagworthingham	J8	Lutton	K14	Sapperton	E13
Barholm	F15	Covenham St. Bartholomew	J5	Hainton	G6	Mablethorpe	L6	Saxby All Saints	E2
Barkston	D12	Cowbit	H15	Halton	H9	Marsh	K7	Saxilby	D7
Barlings	F7	Cranwell	E11	Halton Holgate	K9	Manby	K6	Scampton	D7
Barnetby-le-Wold	F3	Creeton	E14	Hameringham	J8	Marcham-le-Fen	H9	Scarbro	H4
Barnoldby-le-Beck	H4	Croft	L9	Harlaston	D13	Markby	L7	Scawby	D4
Barrowby	C12	Crowland	H15	Harmston	E9	Market Deeping	G15	Scopwick	F10
Barrow-on-Humber	F2	Crowle	B3	Harpwell	D6	Market Rasen	F6	Scotter	C4
Barton-on-Humber	E2	Croxby	G5	Harrington	J8	Marsh Chapel	J4	Scotton	C5
Bassingham	D9	Cuxwold	G4	Hatcliffe	G4	Martin	D11	Scredington	F12
Bassingthorpe	D13	Dalby	K8	Haugh	K7	Marton	C7	Scrivelsby	H9
Baumber	H8	Dalderby	H9	Haverholme	F11	Mavis Enderby	J9	Scunthorpe	D3
Beckingham	C10	Deeping St. James	G16	Hawerby-cum-Beesby	H5	Messingham	C4	Seaby	F4
Belleau	K7	Dembleby	E12	Haxey	B4	Metheringham	F9	Sedgebrook	C12
Belton	B4	Denton	C13	Haydor	E12	Middle Rasen	F6	Sempingham-cum-Pointon	F13
Belton (Grantham)	D12	Digby	F10	Heapham	G11	Mintingsby	G8	Silk Willoughby	F11
Benington	K11	Doddington	D8	Heckington	G12	Minting	H9	Sixhills	G6
Benniworth	G7	Doddington-on-Bain	H6	Heighington	F10	Moorby	D5	Skeness	M9
Bicker	H12	Dorrington	F10	Helpringham	F13	Morton	E4	Skendleby	K8
Bigby	F3	Dowsby	C11	Hemswell	D5	Morton	F14	Skidbrooke	K5
Billingborough	F13	Dry Doddington	C1	Hibaldstow	E4	Muckton	J7	Skillington	D14
Billinghay	G10	Dunholme	E7	Holbeach	J14	Mumby	J8	Skirbeck	J11
Bitchfield	E13	Dunsby	F13	Holton-le-Clay	H4	Navenby	E10	Sleaford	F11
Blankney	F9	Dunston	F9	Holywell	E15	Nettleham	E7	Somerby	F4
Blyborough	D5	East Keal	K9	Hornbling	F12	Newton	F4	Somersby	J8
Blyton	C5	East Kirkby	J9	Horncastle	H8	Newton-by-Toft	E12	South Carlton	D7
Boothby Graffoe	E13	Edenham	F14	Hough-on-the-Hill	D11	Nocton	F9	SouthCockerington	J6
Boothby Pagnell	J11	Edlington	H8	Hougham	D11	Normanton	D11	South Ferryby	E2
Boston	D4	Elsham	E3	Howell	G11	North Carlton	J4	South Kelsey	E5
Bottesford	D8	Epworth	F15	Humberston	F11	North Coates	J4	South Ormsby	J7
Boultham	D8	Evedon	F11	Huttoft	C10	North Kyme	G10	South Somercotes	K5
Bourne	F14	Ewerby	F11	Immingham	D6	North Ormsby	H5	South Witham	D14
Braceborough	E8	Fillingham	L9	Ingoldsby	J11	North Thorpe	D5	Spalding	H14
Bracebridge	E12	Fishtoft	E4	Ingoldmells	M8	North Rauceby	E11	Spital-in-the-Street	D6
Braceby	E8	Fiskerton	H4	Irby-upon-Humber	G4	North Reston	J6	Springthorpe	C6
Branton	E12	Fleet	K14	Irtham	E13	North Scarle	K9	Stainby	D14
Brant Broughton	D10	Flixborough	C3	Keddington	J6	North Somercotes	C5	Stainton-by-Langworthy	F7
Bratton	L9	Floodingham	F13	Keelby	G3	North Thoresby	H5	Stainton-le-Vale	G5
Brigg	E4	Foston	C11	Kelby	E12	North Witham	D14	Stallingborough	G3
Brigsley	H4	Frampton	J12	Kelstern	H6	Norton Disney	D9	Stamford	E16
Brocklesby	G3	Freiston	J11	Kettlethorpe	C7	Old Bolingbroke	J9	Stanton	H7
Broughton	D3	Friskney	K10	Kingerby	E5	Old Leake	K11	Stanton-by-Langworthy	F7
Bucknall	G8	Frodingham	C3	Kirkby-cum-Osgodby	F5	Old Somerby	D13	Staxton	D13
Burgh	L9	Fulbeck	D11	Kirkby-la-Thorpe	F11	Osbornby	F12	Staxton	D13
Burton	D8	Fulstow	J5	Kirkby	C7	Owston	B4	Staxton	D13
Burton Coggles	E14	Gainsborough	C6	Kirkstead	G8	Panton	G7	Staxton	D13
Burton-on-Stather	C2	Gate Burton	C7	Kirton	K14	Partney	K8	Staxton	D13
BurtonPedwardine	F12	Gautby	G6	Kirton-in-Lindsey	D5	Pickworth	E13	Stragglethorpe	D10
Burwell	J7	Gayton-le-Marsh	K14	Knaith	J15	Pinchbeck	H13	Straxton	D13
Buslingthorpe	F6	Gedney Hill	E6	Laceby	D6	Potter Hanworth	F9	Strubby	K7
Butterwick	K11	Glenham	D6	Langtoft	F15				
Cabourne	F4	Glenworth	D6						
Cadney	E4								
Caistor	F4								
Cammeringham	D7								
Canwick	E8								
Careby	E15								

Lincolnshire

Sudbrook
Surfleet
Sutton
Sutton Bridge
Sutton-on-Sea
Sutton St James
Swallow
Swarby
Swaton
Swinerby
Swineshead
Swinstead
Syston

Tallington
Tathwell
Tattershall
Tealby

Balham
Battersea
Bayswater
Bermondsey
Bethnal Green
Blackheath
Bow
Brixton
Camberwell
Camden Town
Catford

Acton
Ashford
Brentford
Chiswick
Cowley
Cranford
Ealing
East Bedfont
Edgware
Edmonton
Enfield
Feltham
Finchley

Abercarn
Abergavenny
Abersychan
Abertillery
Bassaleg
Bedwas
Bedwellty
Bettws-Newydd
Bishon
Blaenavon
Blaina
Bryngwyn
Caerleon
Caerwent
Caldicot
Chapel Hill
Chepstow
Christchurch
Clytha
Crumlin
Cwmbran
Cwmcarvan
Cwmyoy
Devauden
Dingestow
Dinham
Dixton
Ebbw Vale
Goldcliff
Goytre

Acie
Alburgh
Alby
Alldborough
Aldeby
Anmer
Antingham
Ashby St Mary
Ashill
Ashmanhaugh
Ashwellthorpe
Aslaeton
Attleborough
Attlebridge

E11 Temple Bruer
H13 Tetford
H12 Tetney
L14 Theddlethorpe All
L7 Saints
K14 Theddlethorpe St.
G4 Helen
E12 Thoresway
G12 Thorganby
C9 Thornton Curtis
H12 Thornton-le-Moor
E14 Thorpe St. Peter
D12 Threekingham
F16 Thurlby (Newark)
J6 Timberland
G10 Torksey
G6 Tursthorpe

GUIDE TO 10,000 PLACES

E10 Tydd St. Mary
J7 Uffington
J4 Ulceby
K6 Upton
L6 Waddingham
G5 Wainfleet All
F2 Wainfleet St. Mary
E5 Waithe
L9 Walcot
F12 Walesby
F15 Waltham
D9 Washingborough
F10 Welbourn
C7 Welby
L6 Wellingore

K14 Welton
F16 Westborough
F3 West Deeping
C6 West Halton
J5 West Keal
E5 Weston
E9 West Rasen
L9 West Ravendale
L9 West Torrington
H4 Whaplode
H4 Whitton
F12 Wickenby
F5 Wigtoft
H4 Willingham
E8 Willoughby
E10 Willoughton
E12 Wilsford
E10 Winteringham

E7 Winterton
C11 Winthorpe
F16 Wispington
D2 Witham-on-the-Hill
H14 Wold Newton
F16 Woodhall
G4 Woodhall Spa
F7 Woolsthorpe
J14 Woolsthorpe
D1 (Belvoir)
F7 Worlaby
H12 Wragby
C6 Wrangle
L8 Wrawby
D5 Wyberton
E11 Yarnborough

Norfolk

LONDON—KEY TO THE MAP ON PAGE 7111

C5 Chelsea
C4 City
B3 Clapham
E3 Clapton
E2 Deptford
F4 Dulwich
F2 Eltham
D5 Finsbury
E5 Fulham
C2 Greenwich

C4 Hackney
D3 Hammersmith
C5 Hampstead
E1 Holborn
F4 Holloway
E5 Islington
H5 Kennington
D2 Kensington
D2 Kentish Town
B4 Lambeth
G4 Lewisham

E1 New Cross
A3 Paddington
B2 Peckham
D3 Plumstead
D1 Poplar
D1 Putney
D4 Rotherhithe
B3 St. John's Wood
C2 St. Marylebone
D5 St. Pancras
F5 Shepherd's Bush

F4 Shoreditch
B3 Southwark
E4 Stepney
J4 Stoke Newington
F3 Streatham
B5 Sydenham
E3 Tooting
C2 Walham Green
C2 Wandsworth
C2 Westminster
A3 Woolwich

MIDDLESEX—KEY TO THE MAP ON PAGE 7145

C4 Friern Barnet
A5 Greenford
C4 Hampton
C4 Hampton Court
A3 Hanwell
B4 Hanworth
C4 Harefield
C4 Harlington
C2 Harmondsworth
E2 Harrow-on-the-Hill
B4 Hayes
D2 Hendon

D2 Heston
B3 Highgate
B5 Hillingdon
C5 Hornsey
B3 Hounslow
B5 Ickenham
A2 Isleworth
B4 Kingsbury
A4 Laleham
B3 Littleton
B3 Mill Hill
C2 Northolt

B4 Northwood
D3 Norwood Green
A3 Perivale
D2 Pinner
B4 Potters Bar
C4 Ruislip
C3 Shepperton
A5 Southall
A5 Southgate
C2 South Mymms
B3 Staines
B3 Stanmore

B2 Stanwell
B4 Sunbury
C2 Teddington
B3 Tottenham
D1 Twickenham
C3 Twyford
B3 Uxbridge
B3 Wembley
D2 West Drayton
C1 Whitechurch
A5 Willesden
C2 Wood Green

MONMOUTHSHIRE—KEY TO THE MAP ON PAGE 7152

B5 Grosmont
C3 Gwernesey
C4 Henllys
B4 Itton
C6 Kemeys
B4 Commander
D4 Kemeys Inferior
D6 Llanarth
C3 Llanbadoc
B3 Llandegveth
D3 Llandenny
D6 Llandogo
E6 Llanellen
F6 Llanfoist
F4 Liangattock-lingoed
D6 Liangattock-nigh-Usk
D3 Liangattock-Vibon-Avel
C5 Llangview
E4 Llangibby
C2 Llangoven
F5 Llangstone
F5 Liangua
F3 Liangwm-Isaf
B3 Llanhennock
D6 Llanhilleth
D6 Llanllowell
D4 Llanmartin

E1 Llanover
E4 Llanisaintfraed
C5 Llanosy
F5 Llantarnam
D4 Llanthwy-rytherch
D5 Llanthwy-Skirrid
D3 Llanthwy Vach
D4 Llanthony
D5 Llantilio
E4 Crossenny
F4 Llantilio-pertholey
C3 Llantrissant
C3 Llanvaches
D2 Llanvair Discoed
D3 Llanvair
D3 Kilgedin
D3 Llanvapey
D3 Llanvetherine
E2 Llanvihangel
D4 Llanvihangel-Crucorney
D5 Llanvihangel-near-Roggiett
E6 Llanvihangel-nigh-Usk
D5 Llanvihangel-Pontymoel
D5 Llanvihangel-tor-y-mynydd

C3 Llanvihangel-Ystern-Llewern
D3 Llanwenarth
C5 Llanwern
D3 Machen
D2 Malpas
D2 Mamhilad
D5 Marshfield
C1 Mathern
D3 Michaelston-y-fedw
C2 Mitchell Troy
C2 Monmouth
D5 Mynyddislwyn
E5 Nash
E5 Newchurch
D3 Newport
D3 Oldcastle
D3 Panteg
D2 Penallt
D2 Penhow
D2 Penrhos
D2 Penrhy
D3 Peterstone
D3 Pontypool
C4 Portskewett
E4 Raglan
E4 Redwick

B2 Rhymney
E3 Rockfield
C3 Roggiett
D6 Rumney
F5 Runston
E6 St. Arvans
C6 St. Bride's
C4 Netherwent
C7 St. Bride's
F5 Wentlloog
C7 St. Maughans
C6 St. Mellons
F3 St. Pierre
F3 Shirenewton
B5 Skenfrith
E6 Sudbrook
D5 Tintern Abbey
C6 Tintern Parva
A3 Tredegar
D5 Tredunnock
E3 Tregare
F3 Trelleck
C4 Trevethin
F5 Trostrey
E6 Undy
C7 Usk
D6 Whitson
D6 Wilcricke
E4 Wolves Newton
F3 Wonastow

NORFOLK—KEY TO THE MAP ON PAGE 7132

N6 Aylmerton
L9 Aylsham
K3 Bawburgh
K3 Baconsthorpe
N8 Bacton
D4 Bagthorpe
L3 Bale
M7 Banham
F7 Banningham
M5 Barford
J7 Barnham Broom
K8 Barnham
H8 Norwood
J6 Barningham

K2 Barton Bendish
K4 Barton Turf
D4 Bawburgh
J3 Bedingham
M3 Beechamwell
E3 Beeston
H3 Beeston Regis
H9 Beeston
K4 St. Lawrence
J6 Beetley
J6 Beighton
J3 Belaugh
J2 Bergh Apton
J3 Bessingham

D7 Besthorpe
M4 Bexwell
K6 Billingford
L8 Billingford
E7 (East Dereham)
G5 Binham
K2 Bintree
M4 Bittering Parva
M4 Bixley
G5 Blakeney
M6 Billingling
L5 Blofield
L7 Bodney
K3 Booton

H7 Bracon Ash
C8 Bradeston
K10 Bramerton
H5 Brampton
G5 Brancaster
H2 Brandiston
H4 Breckles
G5 Bressingham
L7 Bridgham
H3 Brinton
K4 Brisley
M6 Bristol
F7 Brockdish
J4 Brooke

Broome	M8	Foulsham	H4	Islington	B5	Reymerston	H6	Thornham	D2
Brundall	M6	Foxley	H4	Itteringham	J3	Ringland	J5	Thorpe	N7
Buckingham	M6	Framingham Earl	L7	Kenninghall	H9	Ringstead	D2	Thorpe (Norwich)	L6
Bunwell	J8	Freethorpe	N7	Ketteringham	K7	Rockland All Saints	H8	Thorpe Abbots	K10
Burgh-next-Aylsham	K4	Frenze	J10	Kettlestone	G3	Rockland St Peter	H8	Threxton	F7
Burgh St. Margaret	N5	Frettenham	D5	Kilverstone	F9	Rollesby	N5	Thrigby	N6
Burgh St. Peter	N8	Fring	L3	Kimberley	G7	Rougham	F5	Thurgarton	K3
Burlingham		Fritton	L8	King's Lynn	C5	Roughton	K2	Thurlton	N7
St. Andrews	M6	Fundenhall	J8	Kirby Bedon	L7	Roydon	J10	Thurne	N5
Burlingham		Garboldisham	H9	Kirby Cane	M8	Roydon (Lynn)	D4	Thurning	J4
St. Edmund	M6	Garvestone	H6	Knapton	L3	Runcion Holme	C6	Thursford	G3
Burnham Deepdale	E2	Gately	G4	Lamas	L4	Runtun	K2	Thurton	M7
Burnham Market	E2	Gayton Thorpe	E5	Langford	F8	Rushall	K9	Thuxton	H6
Burnham Norton	E2	Geldeston	N8	Langham	H2	Rushford	G10	Thwaite All Saints	K3
Burnham Overy	F2	Gillingham	N8	Langley	M7	Ryston	C7	Thwaite St. Mary	M8
Burnham Sutton and Ulph	F2	Gissing	K9	Larling	G9	Saham Toney	F7	Tibenham	J9
Burnham Thorpe	F2	Glandford	H2	Lessingham	M4	Sailhouse	M5	Tilney All Saints	B5
Buxton	K4	Gooderstone	E7	Letheringsett	H2	Sail	J4	Tilney St. Lawrence	B5
Bylaugh	H5	Gorleston	O7	Litcham	F5	Salthouse	J2	Titchwell	E2
Caister	O6	Great Bircham	E3	Little Fransham	F6	Sandringham	D4	Tivetshall St. Margaret	K9
Caistor St. Edmunds	L7	Great Dunham	F5	Little Melton	K6	Saxlingham	H2	Toffrees	F4
Cantley	M7	Great Ellingham	H8	Little Plumstead	M6	Saxlingham	G3	Tottenhill	C6
Carbrooke	G7	Great Franscham	F6	Little Snoring	G3	Scarning	G6	Tottington	F8
Carlton St. Peter	M7	Great Hockham	G8	Little Walsingham	G3	Scole	K10	Trimingham	L2
Castle Acre	E5	Great Massingham	E4	Loddon	M7	Scotow	L4	Trowse Newton	L6
Castle Rising	C4	Great Ryburgh	G4	Long Stratton	K8	Scoulton	G7	Trunch	L3
Caston	G8	Great Snoring	G3	Ludham	M5	Sculthorpe	F3	Unstead	L4
Catfield	M5	Great Walsingham	G3	Lyng	J5	Sedgeford	D3	Tuttington	K4
Catton	L6	Great Witchingham	J5	Marham	D6	Seething	M8	Upper	
Cawston	J4	Gresham	K2	Marlingford	J6	Sharrington	H3	Sheringham	J2
Chedgrave	M7	Gressenhall	G5	Marsham	K4	Shelfanger	J9	Upton	N6
Claxton	M7	Grimston	D5	Martham	N5	Shelton	K8	Upwell	B7
Cley	H2	Griston	G7	Matlaske	J3	Shereford	F4	Wacton	K8
Clippesby	N5	Guestwick	H4	Mattishall	H6	Sheringham	K2	Walpole St. Andrew	B5
Cockthorpe	G2	Guntton	L3	Mautby	O6	Shernborne	D3	Walpole St. Peter	B5
Colby	K3	Hackford	H7	Melton Constable	H3	Shimpling	K9	Warham All Saints	G2
Colney	K6	Haddiscoe	N8	Merton	G7	Shingham	G6	Warham St. Mary	G2
Coltishall	L5	Hales	M8	Methwold	D8	Shipham	L7	Watlington	C6
Colton	J6	Halvergate	N6	Metton	K2	Shotesham	L7	Watton	G7
Congham	D4	Hanworth	K3	Middleton	C5	All Saints	D6	Weeting	E9
Costessey	K6	Happisburgh	M3	Mileham	G5	St Mary	L7	Wellingham	F4
Cranwich	E8	Hardingham	H7	Morningthorpe	L8	Shouldham	D6	Wells-next-the-Sea	G2
Cranworth	K6	Hardley	M7	Morston	H2	Shouldham Thorpe	L2	Wendling	G6
Cringleford	K6	Harldwick	M7	Moulton St. Mary	N6	Sidestrand	L4	West Acre	E5
Cromer	K2	Harpley	L9	Moulton St. Michael	K8	Sioley	H8	West Barsham	F3
Croftwick	L5	Hassingham	M7	Mulbarton	M3	Snetterton	D3	West Bradenham	G6
Croftwright	M4	Heacham	D2	Mundesley	M7	Snettisham	E5	West Dereham	D7
Denton	L9	Heckingham	M7	Mundham	D6	South Acre	F3	West Harling	G9
Denver	C7	Hedenham	M8	Narborough	E6	South Lopham	H10	West Lexham	F5
Deopham	H7	Helhoughton	F4	Narford	F6	Southtrepes	L3	West Lynn	C5
Dersingham	D3	Hellesdon	K6	Necton	K10	South Runcion	C6	West Newton	D4
Didlington	E8	Hellington	M7	Needham	J8	South Walsham	M6	West Rudham	J5
Dilham	M4	Hemblington	M6	New Buckenham	F5	South Wootton	J5	West Somerton	N5
Diss	J10	Hempnail	L8	Newton	K7	Sparham	L5	West Tofts	F8
Ditchingham	M8	Hempstead-with-Eccles	N4	Newton Flotman	F2	Spoilworth	F6	West Walton	A6
Docking	E3	Hemsby	O5	North Creake	H4	Sprol	L6	Westwick	L4
Downham Market	C7	Hethe	K7	North Elmham	G9	Stalham	M4	West Winch	C5
Drayton	K5	Hetherst	K7	North Lopham	H5	Stiffkey	G2	West Wretham	F8
Dunston	L7	Hevingham	K4	Northtrepes	L2	Stockton	D7	Weybourne	J2
Earlham	K6	Heydon	J4	North Runcion	C5	Stoke Ferry	L7	Wheatacre	N8
Earsham	M9	Hickling	N4	North Tuddenham	H5	Stoke Holy Cross	L7	Whissonett	G4
East Barsham	G3	Hilgay	C7	North Walsham	L3	Stokesby	N6	Wickhampton	N7
East Bilney	G5	Hillington	D4	Northwold	E8	Stow Bardolph	C6	Wicklewood	J7
East Bradenham	G6	Hindringham	G3	Norton Subcourse	N7	Stow Bedon	G8	Wickmere	K3
East Dereham	H6	Hingham	H7	Norwich	L6	Stradsett	D7	Wiggenhall St. Germans	C6
East Harling	H9	Hockering	J6	Old Buckenham	H8	Stratton St. Michael	K8	Wiggenhall St. Mary	C6
East Lexham	F5	Hockwold-cum-Wilton	D9	Ormesby St. Margaret	O5	Stratton Strawless	K5	the Virgin	B6
Easton	J6	Holkham	F2	Oulton	J4	Suffield	L3	Wighton	G2
East Rudham	F4	Holme Hale	F6	Outwell	B7	Strumpshaw	M6	Wilby	H8
East Ruston	M4	Holme-next-the-Sea	D2	Overstrand	G2	Surlingham	K4	Wimbotsham	C7
East Tuddenham	J6	Holt	J2	Ovington	L7	Sustead	N4	Winfarthing	J9
East Walton	E5	Honing	M4	Oxborough	E7	Swoffham	D5	Winterton	O5
East Winch	D5	Honingham	J6	Oxnead	K4	Swainsthorpe	L7	Witton	M3
East Wretham	G8	Horning	M5	Palling	M4	Swanton Abbot	J5	Wiveton	H2
Edgefield	J3	Horsey	N5	Paston	M3	Swanton Morley	H5	Wolferton	C4
Edingthorpe	M3	Horsford	K5	Pentney	D5	Syderstone	F3	Wolterton	K3
Egmere	F2	Horsham St. Faith	K5	Poringland	L7	Tacolneston	J8	Woodbastwick	M5
Ellingham	M8	Horstead	L5	Postwick	L6	Tasburgh	K8	Woodrising	G7
Elising	H5	Houghton	E4	Potter Heigham	N5	Taverham	K6	Woodton	L8
Emneth	A6	Houghton-on-the-Hill	F7	Pulham St. Mary	K9	Terrington	M5	Wormegay	D6
Erpingham	K3	Houghton St. Giles	G3	Magdalene	K9	St. Clement	B5	Worthing	H5
Fakenham	G4	Howe	L7	Pulham St. Mary the Virgin	K9	Terrington St. John	K8	Wortwell	L9
Felbrig	K2	Hunstanton	D2	Quidenham	H9	Tharston	L9	Wroxham	L5
Felmingham	L4	Hunworth	H3	Rackheath	L5	Thelveton	K10	Wymondham	J7
Feltwell	D8	Jackburgh	E8	Ranworth	M5	Thetford	F9	Yarmouth	O6
Fersfield	J9	Ingham	M4	Raveningham	N8	Thompson	G8	Yaxham	H6
Field Dalling	H2	Ingoldisthorpe	D3	Redenhall	F4	Thornage	H3	Yelverton	L7
Filby	N5	Ingworth	K3	Redham	N7				
Fincham	D6	Irstead	M5	Reepham	J4				
Fritcham	D4			Repps-with-Bastwick	N5				
Flordon	K8								
Fornett St. Peter	K8								

NORTHAMPTONSHIRE—KEY TO THE MAP ON PAGE 7129

Abington	D8	Cottesbrooke	C7	Gretton	D4	Marston St.		Stoke Albany	D5
Adstone	B10	Cottingham	D4	Guisborough	C7	Lawrence		Stoke Bruerne	D9
Alderton	D10	Courteenhall	D9	Hannington	D7	Marston Trussell	B11	Stowe Nine	
Aldwinkle	F5	Cranford St. Andrew	E5	Hardingstone	D8	Maxeys	G1	Churches	C9
Apethorpe	F3	Cranford St. John	E5	Hardwick	E7	Mears Ashby	B11	Strixton	F7
Ashby St. Ledgers	B8	Cransley	D6	Hargrave	G6	Middleton Cheney	D9	Sudborough	F5
Ashton	D9	Crick	B12	Harlestone	C8	Milton	B10	Sulgrave	B10
Aston-le-Walls	A10	Croughton	B10	Harpole	C8	Moreton Pinkney	D7	Sutton	G2
Aynho	B12	Culworth	D8	Harrington	E3	Moulton	C6	Syresham	C11
Badby	B9	Dallington	D8	Harrington	E3	Naseby	F3	Tansor	F3
Bainton	F2	Daventry	B8	Hartwell	C6	Nassington	C9	Thenford	B11
Barby	A8	Deene	E4	Hazelbeech	A9	Nether Heyford	B12	Thornby	B7
Barnack	F2	Denford	D5	Helidon	B11	Newbottle	B9	Thornhaugh	F2
Barnwell	G4	Desborough	C5	Helpston	G2	Newnham	E7	Thorpe Achurch	F4
Barton Seagrave	E6	Dingley	B8	Hemington	F4	Newton	D8	Thorpe Malsor	D6
Benefield	F4	Dodford	E3	Higham Ferrers	B11	Newton Bromswold	G1	Thorpe Mandeville	B11
Blakesley	C10	Duddington	D8	Hinton-in-the	C6	Northampton	B8	Thrapston	F5
Blatherwycke	E3	Duston	E7	Holcot	D7	Northborough	E6	Titchmarsh	G5
Blisworth	D9	Earls Barton	D4	Holdenby	C7	Norton	F4	Towcester	D10
Boddington	A10	East Carlton	C5	Horton	E8	Orlinsbury	E6	Twywell	F5
Boughton	D7	East Farndon	C7	Irchester	F7	Oundle	F4	Ufford	F2
Bozeat	C11	East Haddon	F8	Irthlingborough	E6	Passenham	E10	Upton	D8
Brackley	C5	Easton Maudit	D9	Isam	F6	Paston	H2	Upton	D8
Brampton Ash	E5	Easton Neston	E7	Islip	C5	Pattishall	C9	(Peterborough)	G2
Braybrooke	C4	Easton-on-the-Hill	A10	Kelmarsh	E5	Paulerspury	D10	Wadenhoe	F4
Brigstock	C8	Ecton	G1	Kettering	F3	Peakirk	G1	Wakerley	E3
Brington	C7	Edgcote	C12	King's Cliffe	B12	Peterborough	H2	Walgrave	D6
Brixworth	D8	Etton	B9	King's Sutton	C8	Pilton	F4	Wansford	F2
Brockhall	B6	Evenley	B10	Kingsthorpe	D8	Pitsford	D7	Wappenham	C10
Broughton	D8	Everdon	H1	Kislingbury	C8	Polebrook	G4	Warkton	E5
Bugbrooke	C9	Eydon	B11	Lampert	C6	Pottersbury	E10	Warkworth	A11
Bulwick	E3	Eye	B9	Lilbourne	A7	Preston Capes	B9	Warmington	G3
Burton Latimer	A10	Farthinghoe	B9	Lilford	F4	Pythley	E6	Watford	B8
Byfield	B10	Farthingstone	F6	Litchborough	C9	Radstone	C11	Weedon	B9
Canons Ashby	B8	Fawsley	C8	Little Addington	F6	Raunds	F6	Weedon Lois	C10
Castle Ashby	G2	Finedon	F3	Little Billing	E8	Ravensthorpe	C7	Weekley	E5
Castor	A11	Flore	D9	Little Houghton	E5	Ringstead	F6	Weldon	E4
Catesby	A9	Fotheringhay	E5	Little Oakley	D6	Rockingham	D4	Wellingborough	E7
Chalcombe	F6	Gaddington	F4	Loddington	B8	Rothersthorpe	D9	Werrington	G2
Charwelton	A10	Glapthorn	D10	Long Buckby	G2	Rothwell	D5	West Haddon	B7
Chelveston	C6	Grafton Regis	F6	Loughthorpe	F5	Rushden	F7	Weston Favell	D8
Chipping Warden	E8	Great Addington	E8	Luddington-in-the-Brook	G4	Rushton	D5	Whiston	E8
Church Brampton	D9	Great Billing	E7	Lutton	G4	Saldwell	D7	Whittlebury	D10
Cupstons	C7	Great Doddington	E6	Lyveden	F4	Sibbertoft	B6	Wilby	E7
Cogenhoe	B7	Great Harrowden	E7	Maidford	B9	Slapton	C10	Wittering	F2
Cold Ashby	D9	Great Oakley	D5	Maidwell	C6	Southwick	F3	Wollaston	F7
Cold Higham	C9	Great Oxenden	C5	Marholm	G2	Spratton	C7	Woodford	F5
Collingtree	E2	Green's Norton	C10			Stanford	A6	Woodford Halse	B10
Collyweston	E4	Grendon	E8			Stanwick	F6	Woodnewton	F3
Corby	E10					Staverton	A9	Yardley Hastings	E8
Cosgrove	F4					Stearne	B11	Yelvertoft	B7
Cotterstock									

NORTHUMBERLAND—KEY TO THE MAP ON PAGE 7142

Acklington	J9	Braxton	E4	Felton	J9	Kirkwhelpington	F11	Rothbury	G9
Allendale Town	D14	Brinkburn	H9	Ford	F4	Kyle	G4	St. John Lee	E13
Alnham	F7	Bywell	G14	Gosforth	J13	Lesbury	J7	Seaton Delaval	K12
Alnmouth	J7	Cambo	G11	Greenhead	B13	Longbenton	K9	Shilbottle	J8
Alnwick	J7	Capheaton	G11	Guyness	J8	Longframlington	H13	Simonburn	E12
Alwinton	E8	Chillingham	G6	Haltwhistle	C13	Long Houghton	J7	Stamfordham	G12
Amble	J8	Chirton	L13	Harbottle	E8	Lowick	F4	Stannington	J11
Ancroft	F3	Chollerford	E13	Hartburn	G10	Lucker	H5	Tweedmouth	F2
Aydon	F13	Chollerton	E12	Hartley	L12	Matfen	G12	Tynemouth	L13
Bamburgh	H4	Corbridge	F13	Haydon Bridge	D13	Meldon	H11	Ugham	J10
Beadnell	J5	Cornhill	E4	Hebburn	J10	Mitford	H11	Wall	E13
Bedlington	J11	Corsenside	K10	Heddon-on-the-Wall	H13	Morpeth	J11	Wallsend	K13
Belford	H5	Cresswell	L12	Hepple	F9	Netherwitten	H10	Warden	E13
Bellingham	D11	Cullercoats	F13	Hexham	E13	Newbiggin-by-the-Sea	K10	Wark-on-Tweed	D4
Belsay	G12	Dilston	F5	Holy Island	H3	Newburn	H13	Wark-on-Tyne	D12
Beltingham	D13	Duddo	E3	Holystone	F9	Newcastle-on-Tyne	K13	Whalton	H11
Benwell	J13	Earsdon	K12	Horton	K11	Norham	E3	Whitfield	C14
Berwick-upon-Tweed	F2	Edlingham	H8	Howick	J7	North Shields	E12	Whitley Bay	L12
Bewick	G6	Ellingham	H6	Humshaugh	E12	Otterburn	F6	Whittingham	G7
Birtley	E12	Ellingham	H6	Illderton	F7	Ovingham	E10	Widdrington	J9
Blanchland	F15	Elsdon	E10	Ingram	K12	Ponteland	G13	Willington Quay	K13
Blyth	K11	Embleton	J6	Killingworth	E5	Rochester	H12	Woodhorn	K10
Bolam	G11	Etal	E4	Kirkhaugh	B15	Rock	G4	Wooler	F5
Bolton	H7	Falstone	C10	Kirknewton	E5		D9	Wooperton	G6
Bothal	J10	Farne Islands	J4				J6	Wylam	H13

NOTTINGHAMSHIRE—KEY TO THE MAP ON PAGE 7141

Annesley	B7	Beeston	B9	Burton Joyce	C8	Colwick	C9	East Bridgford	D8
Arnold	C8	Bilborough	B9	Calverton	C8	Cossall	A9	East Drayton	E4
Askham	E4	Bilthorpe	D6	Carburton	C5	Costock	C11	East Leake	B11
Aslockton	E9	Bingham	D9	Car Colston	D8	Cotgrave	C9	East Markham	E5
Attenborough	B10	Bleasby	D8	Carlton-in-Lindrick	C3	Cotham	E8	East Stoke	E8
Averham	D7	Blidworth	C7	Carlton-on-Trent	E6	Cottam	F4	Eaton	D4
Babworth	E4	Blyth	C3	Caunton	E6	Cromwell	E6	Edingley	D7
Balderton	F7	Bole	E3	Clarbrough	D3	Cropwell Bishop	D9	Edwalton	C9
Barnby-in-the-Willows	F7	Bothamsall	D5	Clayworth	D3	Cuckney	B5	Edwinstowe	C5
Barton-in-Fabis	B10	Bradmore	C10	Clifton	B9	Darlton	E5	Egmanton	E5
Beauvale Priory	B8	Bramcote	B9	Clipstone	C6	Daybrook	C8	Elksey	D4
Beckingham	E2	Budby	C5	Coddington	F7	Dunham	F4	Elston	E8
		Bunny	C10	Colston Bassett	D10	Eakring	D6	Elton	E9

Nottinghamshire

GUIDE TO 10,000 PLACES

Rutland

Epperstone	D8	Hucknall	B8	North Clifton	F5	Sherwood Forest	C6	Tithby	D9
Everton	D2	Kelham	E7	North Collingham	F6	Shireoaks	B4	Tollerton	C9
Farnon	E7	Keyworth	C10	North Leverton	E3	Sibthorpe	E8	Treswell	E4
Farnsfield	C7	Kilvington	E8	North Muskham	E6	Skegby	B6	Trowell	B9
Finningley	D1	Kingston-upon-		North Wheatley	E3	Sookholme	B5	Tuxford	E5
Fiskerton	E7	Soar	B10	Norwell	E6	South Collingham	F6	Upper Broughton	D11
Flawborough	E8	Kirklington	D7	Nottingham	C9	South Leverton	E4	Upton	E7
Fledborough	E5	Kirton	D5	Nuthall	B8	South Muskham	E7	Walesby	D5
Flintham	E8	Kneesall	D6	Ollerton	D5	South Scarle	F6	Walkerling-	
Gamston	D4	Kneeton	D8	Ordsall	D4	Southwell	D7	ham	E2
Gedling	C8	Lambley	C8	Orston	E9	South Wheatley	E3	Wallingwells	C3
Gonalston	D8	Laneham	E4	Ossington	E6	Stanford-upon-		Warsop	C5
Gotham	B10	Langar	D9	Owthorpe	D10	Soar	B11	Watnall	B8
Granby	E9	Langford	F7	Oxtown	C7	Stanton-on-the-		Welbeck Abbey	B4
Greasley	B8	Laxton	D5	Papplewick	B7	Wolds	C10	Wellow	D6
Gringley-on-the-		Lenton	B9	Perlethorpe	C5	Stapleford	B9	West Bridgford	C9
Hill	E2	Linby	B7	Plumtree	F3	Stanton-in-the-		West Drayton	D4
Grove	E4	Littleborough	F3	Ragnall	D8	Vale	E8	West Leake	B11
Gunthorpe	D8	Lowdham	D8	Radcliffe-on-		Stokeham	E4	West Markham	D5
Halam	D7	Mansfield	B6	Trent	C9	Strelley	B9	Weston	E5
Halloughton	D7	Mansfield		Rampton	E4	Sturton-le-Steeple	E3	West Stockwith	E2
Harby	F5	Woodhouse	B6	Ratcliffe-upon-		Sutton	D3	Wharton	E9
Harworth	C2	Mapleback	D6	Soar	B10	Sutton Bonington	B11	Widmerpool	C10
Haughton	D5	Marnham	E5	Rempstone	C11	Sutton-in-Ashfield	B6	Wilford	B9
Hawksworth	E8	Mattersey	D3	Retford	D4	Sutton-upon-Trent	E6	Willoughby-on-	
Hawton	E7	Misterton	E2	Rolleston	E7	Syerston	E8	the-Wolds	C11
Hayton	D3	Morton	D7	Saundby	E3			Winkburn	D6
Headon	E4	Newark	E7	Scarrington	E9	Tversal	A6	Winthorpe	F7
Hickling	D10	Newstead	B7	Screveton	E8	Thorney	F5	Wollaton	B9
Hockerton	D7	Normanton-upon-		Scrooby	D2	Thoroton	E9	Woodborough	C8
Holme	E6	Soar	B11	Selston	A7	Thorne	E8	Workshop	C4
Holme Pierrepont	C9	Normanton-upon-		Shelford	D9	Thrumpton	B10	Wysall	C10
Hoveringham	D8	Trent	E5	Shelton	D8	Thurgarton	D8		

OXFORDSHIRE—KEY TO THE MAP ON PAGE 7124

Alderbury	D3	Chipping Norton	B4	Great Rollright	B4	Nether Worton	C4	Standlake	C7
Adwell	F8	Chislehampton	E8	Great Tew	C4	Nettlebed	F8	Stanton Harcourt	C7
Albury	F7	Church		Hampton Gay	D6	Newington	E9	Stanton St John	E6
Alkerton	C2	Hanborough	C6	Hampton Poyle	D6	Newnham Murren	E9	Steeple Aston	D4
Alvescot	A7	Churchill	B5	Hanwell	C2	Newton Purcell	F4	Steeple Barton	C5
Ambrosden	E5	Clanfield	B7	Hardwick	E4	Noke	E6	Stoke Lyne	E4
Ardley	E4	Claydon	D2	Harpsden	G10	North Aston	D4	Stoke Row	F9
Ascott-under-		Clifton Hampden	E8	Headington	E7	North Leigh	C6	Stoke Talmage	F8
Wychwood	B5	Cogges	B6	Hempton	C4	Northmoor	C7	Stonesfield	C5
Asthall	B6	Cokethorpe Park	C7	Henley-on-		North Stoke	E9	Stratton Audley	E4
Aston Rowant	G8	Combe	C6	Thames	G10	Nuffield	F9	Studley	E6
Balscote	C3	Cornwell	A4	Hethe	E4	Nuneham		Swallowcliffe	C3
Bampton	B7	Cote	B7	Hethrop	B4	Courtney	E8	Swallowcliffe	C4
Banbury	C3	Cottisford	E4	Holton	E7	Oddington	E6	Swinbrook	B6
Barford St. John	C4	Cowley	E7	Holwell	A7	Over Worton	C7	Swyncombe	F9
Barford St. Michael	C4	Cropredy	D2	Hook Norton	A7	Oxford	D4	Sydenham	G7
Beckley	E5	Crowell	G8	Horley	C2	Piddington	F6	Tackley	D5
Begbroke	D6	Crowmarsh Gifford	F9	Hornorton	C2	Pyrtown	F8	Tadmorton	C3
Benson	F9	Cuddesdon	E7	Horsepath	E7	Radcot	B8	Taynton	A6
Berrick Prior	F8	Culham	D8	Idbury	A5	Ramsden	B6	Tetsworth	F7
Berrick Salome	F8	Cuxham	F4	Iffley	D7	Rotherfield Greys	G10	Thame	
Bicester	E5	Deddington	D8	Ipsden	F9	Rotherfield		Toot Baldon	E7
Binsey	D7	Dorchester	E8	Islip	D6	Peppard	G10	Towsey	G7
Bix	G9	Drayton	C3	Kelmscott	A8	Rousham	D5	Upper Heyford	D4
Black Bourton	B7	Drayton St. Leonard	E8	Kencott	A7	Salford	B4	Warborough	E8
Bladon	C6	Ducklington	B7	Kiddington	C5	Sandford-on-		Wardington	D2
Bletchington	D5	Duns Tew	D4	Kidlington	D6	Thames	E7	Water Eaton	D6
Bloxham	C3	Easington	F8	Kingham	A5	Sandford St. Martin	C4	Waterperry	F7
Bodcot	D3	Elsfield	E6	Kirtlington	D5	Sarsden	B5	Waterstock	F7
Brightwell Baldwin	F8	Emmington	G7	Langford	A7	Shenington	B2	Watlington	F8
Britwell Salome	F8	Enstone	C5	Langley	B6	Shifford	C7	Wendlebury	E5
Brize Norton	B7	Epwell	B3	Launton	E5	Shilton	A7	Westcot Barton	C4
Broadwell	A7	Ewelme	F9	Leafeld	B6	Shiplake	G10	Weston-on-the-	
Broughton	C3	Eynsham	C6	Lewknor	G8	Shipton-on-		Green	E5
Broughton Pogges	A7	Fifield	A5	Little Faringdon	A7	Cherwell	D6	Westwell	A6
Bucknell	E4	Filkins	F7	Littlemore	E7	Shipton-under-		Wheatfield	F8
Burford	A6	Finmere	E4	Little Rollright	B4	Wychwood	A5	Wheatley	E7
Cassington	D6	Forest Hill	F7	Lower Heyford	D5	Shirburn	F8	Whitchurch	F10
Caversfield	E5	Fringford	D4	Mapledurham	F10	Shorthampton	B5	Widford	A6
Chadlington	B5	Fritwell	E4	Marsh Baldon	A6	Shutford	C3	Wigington	C4
Chalgrove	F8	Fulbrook	E7	Marston	D8	Sibford Gower	B3	Wilcote	C6
Charlbury	B5	Garsington	C5	Merton	E5	Somerton	D4	Witney	B6
Charlton-on-		Glympton	F4	Middleton Stoney	D5	Southern	C7	Wolvercote	D6
Otmoor	E6	Godington	C5	Milcombe	D6	South Leigh	D4	Wood Eaton	E8
Chastleton	A4	Goring	D6	Minster Lovell	E10	South Newington	C3	Woodstock	C6
Checkendon	F10	Great Bourton	D2	Mixbury	F7	South Stoke	E10	Wootton	C5
Chesterton	E5	Great Haseley	D7	Mollington	C2	South Weston	G8	Wroxton	C3
Chinnor	G7	Great Milton	F7	Mongewell	E9	Spelsbury	B5	Yarnton	D6
						Stadhampton	E8	Yelford	B7

RUTLAND—KEY TO THE MAP ON PAGE 7145

Ashwell	B2	Cottesmore	B2	Hambleton	B2	Normanton	C2	Stoke Dry	B4
Ayston	B3	Edith Weston	C3	Ketton	C3	North Luffenham	C2	Stretton C1	B1
Barrowden	C3	Egleton	C2	Langham	A2	Oakham	B2	Tickenhote	C2
Belton	A3	Empingham	D2	Liddington	B4	Pickworth	C2	Tinwell	C2
Braunston	A2	Essendine	B2	Little Casterton	D2	Preston	B3	Tixover	C3
Brooke	B3	Exton	B2	Lyndon	B3	Ridlington	A3	Tolethorpe	D2
Burley-on-the-Hill	B2	Glaston	C2	Manton	B3	Ryhall	D2	Uppingham	B3
Caldecott	B4	Great Casterton	B1	Market Overton	B3	Seaton	B3	Whissendine	A1
Clipsham	C1	Greetham		Morcott		South Luffenham	C3	Whitwell B2	Wing B3

SHROPSHIRE—KEY TO THE MAP ON PAGE 7150

A bdon	F8	Chetwynd	H4	Halston	C3	Melverley	C5	Shifnal	H6
Acton Burnell	E6	Child's Errall	G4	Harley	F6	Meole Brace	E5	Shipton	F8
Acton Round	G7	Chirbury	B7	Heath	F8	Middleton	F9	Shrawardine	D5
Acton Scott	D8	Church Preen	E7	Hengoed	B3	Middleton		Shrewsbury	E5
Adderley	G2	Church		High Errall	F5	(Chirbury)	B7	Sidbury	G9
Aldbury	C5	Pulverbatch	D6	Highley	H9	Middleton Scriven	G8	Silvington	F9
Albrighton	J6	Church Stretton	D7	Hinstock	G3	Milston	G10	Smethcott	D7
Albrighton		Claverley	J8	Hodnet	F3	Minsterley	C6	Stanton Lacy	E9
(Shrewsbury)	E4	Clee St. Margaret	F9	Holdgate	F8	Monkhopton	G8	Stanton Long	F8
Alveley	H9	Cleobury		Hope	C7	Montford	D5	Stanton-upon-	
Ashford Bowdler	E10	Mortimer	G10	Hope Baggot	F10	More	C8	Hine-Heath	F4
Ashford		Cleobury North	G8	Hope Bowdler	E8	Moreton Corbet	F4	Stapleton	E6
Carbonell	E10	Clive	E4	Hopesay	D9	Moreton Say	G2	Stirchley	G6
Astley	E4	Clun	C9	Hopton Castle	C9	Morville	G7	Stockton	H7
Astley Abbotts	H7	Clunbury	C9	Hopton Wafers	G10	Much Wenlock	G7	Stoke St	
Aston Botterell	G9	Clungunford	D9	Hordley	D3	Munslow	E8	Milborough	F9
Aston Eyre	G7	Coalbrookdale	G6	Hughley	F7	Myddle	E4	Stokesay	D9
Atcham	E6	Cockshutt	D3	Ightfield	F2	Myndtown	D8	Stoke-upon-Tern	G3
B adger	H7	Cold Weston	F9	Ironbridge	G6	Nash	F10	Stottesdon	G9
Barrow	G7	Condover	E6	Kemberton	H6	Neen Savage	G9	Stowe	C10
Baschurch	D4	Coreley	F10	Kenley	F7	Neen Sollars	G10	Sutton	E5
Battlefield	E5	Cound	F6	Kinlet	H9	Neenton	G8	Sutton Maddock	H6
Beckbury	H7	Cressage	F6	Kinnerley	C4	Nesscliffe	C4	Tasley	G7
Bedstone	C10	Culmington	E9	Kinnersley	G5	Newcastle	B9	Tong	J6
Benthall	G6	Dawley	G6	Knockin	C4	Newport	H4	Tugford	F8
Berrington	E6	Diddlebury	E9	Knowbury	F10	Newtown	E3	Uffington	E5
Berwick	A5	Ditton Priors	F8	Leebotwood	E7	Norbury	C8	Uppington	F6
Bettws-y-Crwyg	A9	Donington	J6	Lee Brockhurst	F3	Norton-in-Hales	G2	Upton Cressett	G8
Bicton	D5	Dorrington	E6	Leigh	F6	Oakengates	H5	Upton Magna	F5
Billingsley	H8	Dudleston	C2	Lilleshall	H5	Oldbury	H8	Waters Upton	G4
Bishop's Castle	C8	Easthope	F7	Linley	C8	Onibury	D9	Wellington	G5
Bitterley	F10	Eaton	C8	Little Ness	D4	Oswestry	B3	Welshampton	D2
Bolas Magna	G4	Eaton Constantine	F4	Little Wenlock	G6	Pettton	D3	Wem	E3
Bonington	J6	Edgmond	H6	Llanvair	D2	Pitchford	D6	Westnor	D8
Boraston	F10	Edgton	D9	Waterdine	B10	Pontesbury	F3	Westbury	C6
Boscobel	J6	Edgton	D9	Llanymynech	B4	Prees	E4	West Felton	C4
Bourton	F7	Ellesmere	D2	Longden	D6	Preston Gubbals	G5	Wheatthill	G9
Bridgnorth	H8	Eyton-on-the-		Longford	H4	Preston-on-the-	G5	Whitchurch	E2
Bromfield	E10	Weald-Moors	G5	Longnor	E7	Weald-Moors	H8	Whittington	C3
Broseley	G7	Farlow	G9	Loppington	E3	Quatford	H8	Whitton	F10
Broughton	E4	Fitz	D5	Loughton	F9	Quatt	D7	Whixall	E2
Bucknell	C10	Ford	D5	Ludford	E10	Ratlinghope	E8	Willey	G7
Buildwas	G6	Frodesley	H8	Ludlow	E10	Rushbury	D8	Wistanstow	D7
Burford	F11	Glazeley	D6	Lydbury North	C9	Ruyton-of-the-	D4	Withington	H5
Burwarton	F9	Great Hanwood	C5	Lydharn	C8	Eleven-Towns	H6	Woodcote	F5
C alverhall	F2	Great Ness	D7	Madley	G8	Ryton	C2	Woolstaston	D7
Cardeston	D5	Great Wollaston	C5	Malinslee	E6	St. Martins	B3	Worfield	H7
Cardington	E7	Greet	F10	Market Drayton	G6	Selattyn	F4	Worthen	C8
Caynam	F10	Grinshill	E4	Marton	D4	Shawbury	F6	Wrockwardine	F5
Chelmarsh	H8	Haberley	D4			Shelve	C7	Wroxeter	F6
Cheswardine	H3	Hadnall	D9			Sheriffhales	H5	Yockleton	D5
Chetton	G8	Halford							

SOMERSET—KEY TO THE MAP ON PAGE 7118

A bbots Leigh	L1	Blagdon	L3	Charterhouse-on-	K3	Congresbury	K3	East Pennard	M6
Aisholt	G6	Bleadon	J3	Mendip	L4	Corfe	G8	East Quantoxhead	F5
Alford	M6	Bossington	C5	Cheddar	K4	Corston	N2	Edington	J6
Aller	J7	Bradford	G8	Cheddar Fitzpaine	H7	Coxington	J5	Elworthy	F6
Allerford	C5	Bratton Seymour	N7	Chedzoy	J6	Cothelstone	G7	Emborough	M4
Angersleigh	G8	Brean	H4	Chelvey	K2	Crech St Michael	H7	Engliscombe	N3
Ansford	M6	Brent Knoll	J4	Chelwood	M3	Crewkerne	K9	Enmore	H6
Ash	K8	Bridgwater	H6	Chesterblade	N5	Cricket Malherbie	J9	Evercrech	N6
Ashbrittle	E8	Brislington	M2	Chew Magna	M3	Cricket St Thomas	J10	Exford	C6
Ashcott	K6	Broadway	H9	Chew Stoke	L3	Croscombe	M5	Exton	D6
Ashill	H8	Brockley	K2	Chewton Mendip	M4	Crowcombe	F6	Farleigh	
Ashington	L8	Brompton Ralph	F6	Chilcompton	M4	Cucklington	O7	Hungerford	O3
Axbridge	K4	Brompton Regis	D7	Chillington	J9	Cudworth	J9	Farmborough	N3
B abary	M7	Broomfield	G7	Chilthorne Domer	L8	Culbone	C5	Farrington Gurney	
Babington	N4	Brushford	D7	Chilton Cantelo	M8	Curland	H9		M4
Backwell	L2	Bruton	N6	Chilton Trinity	H6	Curry Mallet	J8	Fiddington	G5
Badgworth	J4	Brympton	L9	Chilton-upon-	J6	Curry Rivel	J7	Fitzhead	F7
Bagborough	G6	Buckland Denham	O4	Polden	J6	Cutcombe	D6	Flax Bourton	L2
Baltonsborough	L6	Buckland St. Mary	H9	Chinnock	K9	Dinder	M5	Foxcote	N4
Banwell	J3	Burnett	N2	Chipstable	E7	Dinnington	K9	Freshford	O3
Barrington	J8	Burnham-on-Sea	H4	Chiselborough	K9	Ditchat	G6	Frome	O5
Barrow Gurney	L2	Burrington	K3	Christon	J3	Dodington	J9	Glastonbury	L6
Barton St. David	L6	Burrow Bridge	J7	Churchill	K3	Donyatt	M5	Goathurst	H6
Barwick	L9	Bury	D7	Churchstanton	G9	Douling	J9	Godney	L5
Batcombe	N6	Butcombe	L3	Clapton-in-Gordano	K1	Dowlsh Wake	N5	Great Elm	O4
Bath	O2	Butleigh	L6	Clatworthy	E7	Downhead	M4	Greenham	F8
Bathampton	O2	C ameley	M3	Claverton	O2	Downside	K8	Greinton	K6
Batheaton	F8	Camerton	N3	Cleeve	K2	Drayton	D7	Halse	F7
Bathford	O2	Cannington	H6	Clevedon	J2	Dulverton	N3	Hardington	O4
Bawdrip	J6	Carhampton	E5	Cloford	N5	Dundry	D5	Hardington	L9
Beckington	O4	Castle Cary	M7	Closworth	L9	Dunkerton	H6	Mandeville	
Beer Cromcombe	J8	Castcott	J6	Combe Down	O3	Dunster	H7	Plucknett	K9
Berkley	O4	Chaffcombe	J9	Combe Florey	F7	Durleigh	J4	Hatch Beauchamp	H6
Berrow	H4	Chapel Allerton	K4	Combe Hay	N3	Durston	N5	Hawkridge	C7
Bickenhall	H8	Chard	J10	Combe St. Nicholas	H9	East Brent	K8	Heathfield	F7
Bicknoller	F6	Charlcombe	O2	Compton Bishop	J4	East Coker	L7	Hemington	N8
Biddisham	J4	Charlton Adam	L7	Compton Dando	M2	East Cranmore	L7	Henstridge	N8
Bishop's Hull	G7	Charlton	N8	Compton Dundon	K6	East Harptree	L1	Highbridge	H5
Bishop's Lydeard	G7	Chorethorne	N8	Compton Martin	L3	East Lambrook	L1	High Ham	K7
Bishopsworth	M2	Charlton Mackrell	L7	Compton	N7	East Lydford	L1		
Blackford	N7	Charlton Musgrove	N7	Pauncefoot	N7	Easton-in-Gordano	L1		

Somerset

GUIDE TO 10,000 PLACES

Staffordshire

High Littleton	M3	Lydeard St.	F6	Paulton	N3	Stanton Drew	M3	Wayford	K10
Hillfarrance	F8	Lawrence	J4	Pawlett	H5	Stanton Prior	N3	Weare	K4
Hinton Blewett	M3	Lymsham	J5	Pendomer	L9	Staple Fitzpaine	H8	Wedmore	K5
Hinton		Lynch	C5	Penselwood	O7	Stavordale	O6	Wellington	F8
Charterhouse	O3	Lyng	J7	Pensford	M3	Stawley	E8	Wellow	O3
Hinton St. George	K9	Maperton	N7	Pill	L1	Stockland Bristol	G5	Wells	L5
Holcombe	N4	Mark	J5	Pilton	M5	Stocklinch	J8	Wemdbon	H6
Holford	G5	Marksbury	N5	Pitcombe	N6	Stogumber	F6	West Bradley	L6
Holton	N7	Marston Bigott	O5	Pitminster	G8	Stogursey	G5	West Buckland	G8
Hornblotton	M6	Marston Magna	M8	Pitney	K7	Stoke Pero	C5	Westbury	L4
Horner	C5	Martock	K8	Podimore	L7	Stoke St. Gregory	J7	West Camel	M7
Horsington	N8	Meare	K5	Porlock	C5	Stoke St. Mary	H8	West Coker	L9
Huish		Mells	N4	Portbury	L1	Stoke-sub-	N5	West Cranmore	N5
Champflower	E7	Merriott	K9	Portishead	K1	Hamdon	K8	West Harptree	L3
Huish Episcopi	K7	Middlezoy	J6	Preston Plucknett	L8	Stoke Trister	O7	West Hatch	H8
Huntspill	H5	Midsomer Norton	N4	Priddy	L4	Ston Easton	M4	West Lydford	L6
Hutton	J3	Milborne Port	N8	Priston	N3	Stowell	N8	West Monkton	H7
Ilchester	L8	Milton Clevedon	N6	Publow	M3	Stowey	M3	Weston	N2
Ile Abbots	J8	Milverton	F7	Puckington	J8	Stratton-on-the-		Weston	
Ile Brewers	J8	Minehead	D5	Puriton	H5	Fosse	M4	Bampfylde	M7
Ilminster	J9	Misterton	K10	Puxton	K3	Street	L6	Weston-in-	
Ilton	J8	Monksilver	E6	Pylle	M6	Stringston	G5	Gordano	K1
Kinton		Monkton Combe	O3	Queen Camel	M8	Sutton Bingham	L9	Weston-super-	
Mandeville	L7	Montacute	L8	Queen Charlton	M2	Sutton Mallet	J6	Mare	H3
Kelston	N2	Moorlynych	J6	Raddington	E7	Sutton Montis	M8	Weston Zoyland	J6
Kenn	K2	Muchelney	K8	Radstock	N4	Swainswick	O2	West Pennard	L6
Kewstoke	J3	Mudford	M8	Redlynch	N6	Swell	J8	Whately	O5
Keynsham	M2	Nailsea	K2	Rodden	O5	Taunton	J10	Wheatchill	M7
Kilmersdon	N4	Nempnett	L3	Rode	O4	Tellisford	O4	Whitchurch	M2
Kilton	G5	Thrubwell	G6	Rodney Stoke	L4	Templecombe	N8	White	
Kilve	F5	Nether Stovey	N2	Rowberrow	K3	Thorne	L8	Lackington	J9
Kingsbury Episcopi	K8	Nettlecombe	E6	Ruighton	F8	Thorne St.		Whitestaunton	H9
Kingsdon	L7	Newton St. Lo	M7	Runnington	H7	Margaret	F8	Wick St Lawrence	J2
Kingstone	J9	North Barrow	M7	St. Audries	F5	Thorn Falcon	H8	Widcombe	O3
Kingston St. Mary	G7	North Cadbury	J7	St. Catherine	O2	Thurlbear	H8	Williton	F5
Kingston Seymour	J2	North Cheriton	N7	St Michael Church	H7	Thurlroxtton	H7	Wincanton	N7
Kingweston	L7	North Curry	H7	Saltford	N2	Tickenham	K2	Winford	L2
Kittisford	F8	North Newton	L8	Sampford Arundel	F8	Timberscombe	D5	Winscombe	K4
Knowle St Giles	J9	North Perrott	K9	Sampford Brett	F6	Timbury	N3	Winsford	C6
Lamyatt	N6	North Petherton	H6	Seavington St. Mary	K9	Tintinhull	D3	Winsham	J10
Langford	F8	North Stoke	N2	Seavington St.	F9	Tivington	L8	Witham Friary	O5
Budville		North Wootton	L5	Michael	K9	Tolland	D5	Withiel Florey	D6
Langport	K7	Norton Fitzwarren	G7	Shapwick	D5	Treborough	F7	Withycombe	E5
Langridge	O2	Norton Malwearward	M2	Shapton	K6	Trull	E6	Withypool	C6
Laverton	O4	Norton St Philip	O4	Shepton		Twerton	G8	Wiveliscombe	F7
Leigh-on-Mendip	N5	Hamdon	K9	Beauchamp	K8	Ubley	N2	Woolley	O2
Limington	L8	Nunney	O5	Shepton Mallet	M5	Uphill	L3	Woolverton	O4
Litton	M4	Nynehead	F8	Shepton Montague	N7	Upton	H3	Wootton Courtney	D5
Locking	J3	Oake	F7	Simsobath	B6	Upton Noble	D7	Worle	J3
Long Ashton	L2	Oare	B5	Somerton	K7	Walton	N6	Wraxall	L2
Long Load	K8	Oldcombe	L9	South Barrow	M7	Walton-in-	K6	Wringington	K3
Long Sutton	K7	Old Cleeve	E5	South Cadbury	N6	Gordano		Wyke	N4
Lopen	K9	Orchardleigh	O4	South Petherton	M7	Wambrook	K1	Champflower	N6
Lovington	M7	Orchard Portman	G8	South Stoke	K8	Wanstrow	H10	Yarlington	N7
Low Ham	J7	Othery	J7	Sparkford	O3	Washford	N5	Yatton	K2
Luccombe	C5	Otterford	G9	Spaxton	M7	Watchet	E5	Yeovil	L9
Lullington	O4	Otterhampton	H5	Standerwick	P4	Waterrow	E7	Yeovilton	L8
Luxborough	D6	Over Stovey	G6						

STAFFORDSHIRE—KEY TO THE MAP ON PAGE 7148

Abbots' Bromley	F7	Brownhills	E9	Drayton Bassett	G9	Hints	G9	Milwich	D6
Acton Trussell	D7	Burntwood	F8	Eccleshall	C6	Hoar Cross	F7	Mow Cop	C3
Adbaston	B6	Burslem	C4	Elford	G8	Hopton	D6	Moxley	D10
Aldridge	F9	Burton-on-Trent	H7	Ellastone	F4	Horton	D3	Muckleston	A5
Alrewas	G8	Bushbury	D9	Endon	D3	Ilam	F3	Netherton	D11
Alstonfield	F3	Butterton	F3	Enville	C11	Ingestre	D7	Newcastle-	
Alton	F4	Calwich	F4	Etruria	C4	Ipstones	E3	under-Lyme	C4
Armitage	F8	Cannock	E8	Farewell	F8	Keele	B4	Newchapel	C3
Ashley	B5	Castlechurch	D7	Fazeley	G9	Kids Grove	C3	Norbury	B7
Audley	B3	Cauldon	F4	Fenton	C4	King's Bromley	F7	Norton Canes	E9
Barton-under-		Caverswall	D4	Forton	B7	Kingsley	E4	Oakamoor	E4
Needwood	G7	Chartley Holme	E6	Gailey	D8	Kingstone	F6	Okeover	G4
Baswich	D7	Chasetown	E8	Gayton	E6	Kingswinford	C11	Oulton	D5
Bednall	D7	Cheadle	E4	Gentleshaw	C7	Kinver	C12	Patshull	B10
Betley	B4	Chebsey	C6	Gnosall	E8	Lapley	C8	Pattingham	C10
Biddulph	C2	Checkley	E5	Great Barr	C7	Leek	E3	Penkridge	D8
Bilston	D10	Ceddleton	D3	Grindon	E10	Leigh	E5	Penn	C10
Blithfield	E7	Chesterton	C4	Hales	F3	Lichfield	F8	Pipe Ridware	F7
Blore	F4	Church Eaton	H8	Hammerwich	A5	Longdon	F2	Quarry Bank	D11
Bloxwich	E9	Clifton Campville	C9	Hamstall Ridware	F9	Longnor	D4	Ranton	C7
Blymhill	B8	Codsall	H8	Hanbury	G7	Loxley	E6	Rochester	F5
Bobbington	B11	Colwich	E7	Hanley	F6	Madeley	B4	Rollleston	H6
Bradley	C7	Coseley	D10	Harlaston	C4	Maer	B5	Rowley Regis	D11
Bradley-in-the-		Creswell	C6	Haighton	G8	Marchington	F6	Rugley	D3
Moors	E5	Croxall	G8	High Offley	B6	Mavesyn Ridware	F7	Rushall	E7
Bramshall	F6	Croxden	F5	Himley	C11	Mayfield	E9	Rushton Spencer	D2
Bransford	G7	Darlaston	E10			Milton	D4		
Brereton	E8	Denstone	F5						
Brewood	C8	Dilthorne	D4						
Brierley Hill	D11	Draycott-in-the-	E5						
Broughton	B6	Moors							

Sandon	D6	Statfold	H9	Tettenhall	C10	Wall	F9	Wetton	F3
Sedgley	D10	Stoke-on-Trent	C4	ThorpeConstantine	H8	Walsall	E10	Whitmore	B5
Seighford	C7	Stone	D5	Tipton	D10	Walton	D7	Whittington	G9
Shallowford	C6	Stowe	E6	Tittensor	C5	Waterfall	F3	Wichnor	G8
Sharehill	D9	Stretton	C8	Tixall	D7	Wednesbury	E10	Willenhall	D10
Sheen	F2	Stretton (Burton)	H6	Trentham	C5	Wednesfield	D10	Wolstanton	C4
Shenstone	F9	Swithamley	D2	Trysull	C10	Weeford	F9	Wolverhampton	D10
Smethwick	E11	Swynnerton	C5	Tunstall	C3	West Bromwich	E11	Wombourne	C10
Stafford	D7			Tutbury	G6	Weston-on-Trent	E6	Wootton	F4
Standon	C5	Talke	C3			Weston-under-Lizard	B8		
Stanton	F4	Tamworth	G9	Uttoxeter	F5	Wetley Rocks	D4	Yoxall	G7
Stapenhill	H7	Tatenhill	G7						

SUFFOLK—KEY TO THE MAP ON PAGE 7133

Acton	D7	Charsfield	H5	Great Blakenham	G6	Lavenham	D6	Rickinghall	
Aldeburgh	L5	Chattisham	G7	Great Bradley	A6	Lawshall	D6	Inferior	F3
Alderton	K7	Chediston	K3	Great Bricett	F6	Lawfield	J3	Rickinghall	
Alldham	F7	Chelmondiston	H8	Great Finborough	F5	Layham	F7	Superior	F3
Aldringham	L5	Chelsworth	E6	Great Glemham	K5	Leiston	L5	Ringsfield	K1
Alpheton	D6	Chevington	C5	Great Livermere	D4	Letheringham	J5	Ringshall	F6
Ampton	D3	Chilton	D7	Great Saxham	C5	Levington	H7	Risby	C4
Ashbocking	G6	Clare	C7	Great Thurlow	B6	Lidgate	B5	Rishangles	G5
Asby	L8	Claydon	G6	Great Waldingfield	D7	Lindsey	E7	Rougham	D4
Aspall	G4	Clopton	H6	Great Wheltenham	D5	Linstead Parva	J3	Rumburgh	K2
Assington	E8	Cockfield	D6	Great Wratting	B6	Little Blakenham	G6	Rushbrooke	D5
Athelington	H4	Coddenham	G6	Groton	E7	Little Bradley	B6	Rushmere	L1
		Combs	F5	Grundisburgh	H6	Little Cornard	D3	Rushmere	
Bacton	F4	Coney Weston	E3	Guntun	M8	Little Glemham	K5	St. Andrew	H7
Badingham	J4	Cookley	K3	Hacheston	J5	Little Saxham	C4		
Badwell Ash	E4	Copdock	G7	Hadleigh	F7	Little Stonham	G5	Santon Downham	C2
Bardwell	E3	Corton	M8	Halesworth	K3	Little Thurlow	B6	Sapiston	D3
Barham	G6	Cotton	F4	Hargrave	C5	Little Waldingfield	E7	Saxmundham	K4
Barking	F6	Covehithe	M2	Harkstead	H8	Little Wenham	F7	Shadingfield	L2
Barnardiston	B6	Cowlinge	B6	Hartest	C6	Little Wheltenham	D5	Shelly	F8
Barnby	L1	Craftfield	J3	Hasketon	G5	Little Wrattling	B7	Shimpling	D6
Barnham	D3	Creeping St. Mary	F5	Haughley	F5	Long Melford	D7	Shotley	H8
Barningham	E3	Creeping St. Peter	F5	Haverhill	A7	Lound	M8	Shottisham	J7
Barrow	C4	Cretingham	H5	Hawkedon	C6	Lowestoft	M1	Sibton	K4
Barsham	K1	Crowfield	G5	Hawstead	D5			Snape	K5
Barton Mills	B3	Culford	C4	Helmingham	H5	Martlesham	H7	Somerleyton	L8
Battisford	F6	Culpho	H6	Hemingstone	G6	Mellis	G3	Somersham	G6
Bawdsey	K7			Hemley	J7	Melton	J6	Somerton	C6
Baylham	G6	Dalham	B5	Hengrave	C7	Mendham	J2	Sotherton	L2
Beccles	L1	Dallinghoo	J6	Henley	G4	Mendlesham	G4	Sotterley	L2
Bedfield	H4	Darsham	L4	Henstead	L2	Metfield	J2	South Cove	L2
Bedingfield	H4	Denham	H4	Hepworth	E3	Mettingham	K1	South Elmham	J2
Belstead	L7	Denham (Eye)	H3	Herringfleet	L8	Mickfield	G5	Southolt	H4
Belton	M2	Dennington	J4	Hessett	E5	Middleton	L4	Southwold	M3
Benasre	K5	Denston	C6	Heveningham	J3	Milden	E7	Spexhall	K2
Bentley	G8	Depden	C5	Higham	F8	Mildenhall	B3	Sproughton	G7
Beyton	E5	Drinkstone	E5	Hitcham	G7	Monewden	H5	Stanningfield	D5
Bildeston	E6	Dunwich	L4	Hitcham	E6	Monks Eleigh	E6	Stansfield	C6
Blaxhall	K5	Earl Soham	H4	Holbrook	G8	Monk Soham	H4	Stansford	E3
Blundeston	M8	Earl St. John	G5	Hollesley	K7	Moulton	B4	Sternfield	K5
Blyford	L3	East Bergholt	F8	Holton	K3	Mutford	L1	Stoke Ash	G4
Blythburgh	J3	Easton	J2	Homersfield	J2			Stoke-by-Clare	B7
Botesdale	F6	Edwardstone	D3	Honington	D3	Nacton	H7	Stoke-by-Nayland	E8
Boulge	J8	Ellough	E3	Hopton	E3	Naughton	F6	Stonham Aspall	G5
Boxford	E7	Elmsett	L2	Hopton (Yarmouth)	M7	Needham Market	F6	Stoven	L2
Boxted	C6	Elmswell	F7	Horham	H3	Needstead	G6	Stowlangtoft	E4
Boyton	K6	Elveden	E4	Horringer	C5	Newbourn	J7	Stowmarket	F5
Bradfield Combust	D5	Eriswell	C2	Hoxne	H3	Newmarket	A4	Stradbroke	H3
Bradfield St. Clare	D5	Erwarton	B3	Hundon	B6	Newton	D7	Stradishall	B6
Bradfield St. George	D5	Euston	H8	Hunston	E4	North Cove	L1	Stratford	
Bradwell	M7	Exning	D3	Huntingfield	J3	Norton	E4	St. Andrew	K5
Braseworth	G3	Eye	A4	Icklingham	C3	Nowton	D5	Stratford St. Mary	F8
Bramfield	K7	Eyeke	G6	Ickworth	C5	Occold	G4	Stutton	G3
Bramford	G3			Iken	K5	Oftton	F6	Sudbourne	K6
Brampton	L2	Fakenham Magna	D3	Ilketshall	K1	Old Newton	F5	Sudbury	D7
Brandeston	H5	Falkenham	J8	Ilketshall	K1	Onehouse	F5	Sutton	J7
Brandon	C2	Farnham	K5	Ilketshall St. John	K1	Orford	L6	Sweffling	K4
Brantham	G8	Felixstowe	J8	Ilketshall	K2	Otley	H5	Swilland	H6
Bredfield	J6	Finningham	F4	Ilketshall	K2	Oulton	M1	Syleham	H3
Brent Eleigh	E6	Flempton	J2	Ilketshall	K2	Ousden	B5		
Brettenham	E6	Flixton	J2	Ilketshall	K2			Tannington	H4
Brightwell	H7	Fornham All Saints	C4	Ingham	D4	Pakefield	M1	Tattlingstone	G8
Brockley	C6	Fornham St. Martin	D4	Ipswich	H7	Pakenham	E4	Theberton	L4
Brome	G3	Framlingham	J4	Ixworth	E4	Palgrave	G3	Theltham	F3
Bromeswell	J6	Framsden	H5	Ixworth Thorpe	D3	Parham	J5	Thornington	G4
Bruisyard	J4	Freckenham	A3	Kedington	B7	Pettaugh	G5	Thornodon	G4
Brundish	J4	Fressingfield	J3	Kelsale	K4	Pettistree	J6	Thornham	G6
Bungay	K1	Freston	G7	Kenton	B4	Playford	H8	Thorpe Morieux	E6
Bures	D8	Friston	K5	Kersey	H4	Polstead	E8	Thrandeston	G3
Burgate	F3	Fritton	L2	Kesgrave	E7	Poslingford	C6	Thurston	E4
Burgh	H6	Frostenden	B4	Kessingland	M2	Preston	E6	Thwaite	G4
Burgh Castle	L7	Gazeley	E5	Kettlebaston	E6	Ramsholt	J7	Tostock	E4
Burstall	G7	Gedding	F4	Kettleburgh	J5	Rattlesden	E5	Trimley	J8
Bury St. Edmunds	D4	Gipping	M1	Kirkley	M1	Rede	C5	Troston	D3
Butley	K6	Gisleham	F3	Kirton	L5	Redgrave	F3	Tuddenham	H6
Buxhall	E5	Glemsford	C5	Knodishall	L5	Redisham	K2	Tunstall	K5
Campsea Ash	J5	Gosbeck	E4	Lackford	C4	Reddingfield	H3		
Capel St. Mary	F8	Gosbeek	E4	Lakenheath	B2	Rendham	K4	Ubbeston	J3
Carlton Colville	M1	Great Ashfield	D4	Langham	H6	Rendlesham	K6	Ufford	J6
Cavendish	C7	Great Barton	D4			Reydon	L3	Uggeshall	L2
Cavenham	B4	Great Bealings	H6						

Walberswick
Walpole
Walsham-le-
Willows
Walton
Wangford
Wangford
(Southwold)
Wantisden

L3 Washbrook
K3 Wattisfield
Wenhaston
E3 Westerfield
J8 Westhall
B2 Westhorpe
Wattleton
L2 Westley
K6 Weston

G7 West Stow
F3 Wetherden
L3 Wetheringsett
H6 Wepstead
K2 Wherstead
F4 Whittton
L4 Wickhambrook
C4 Wickham Market
L1 Wickham Skeith

C4 Wilby
F5 Wingfield
G4 Winston
C5 Wissett
G7 Wissington
G6 Withersdale
B6 Withersfield
J5 Wixoe
G4 Woodbridge

H3 Woolpit
H3 Woolverstone
H5 Wordwell
K2 Worlingham
E8 Worlington
J2 Worlingworth
A6 Wortham
B6 Wrentham
B7 Yaxley
J6 Yoxford

SURREY—KEY TO THE MAP ON PAGE 7113

A binger
Abinger
Hammer
Addington
Addlestone
Albury
Alfold
Ash
Ashstead
Bagshot
Banstead
Barnes
Beddington
Betchworth
Bisley
Blechingley
Box Hill
Bramley
Brockham Green
Buckland
Burstow
Busbridge
Byfleet

E5 Chipstead
C3 Chobham
E3 Cobham
H2 Coldharbour
D2 Compton
D4 Coulsdon
D6 Cranleigh
B4 Crowhurst
F3 Croydon
B2 Dorking
G3 Dunsfold
F1 Eashing
G2 East Clondon
F4 East Horsley
C3 East Molesey
G4 Effingham
D5 Egham
D5 Elstead
F4 Epsom
F4 Esher
G5 Ewell
C5 Ewhurst

G3 Great Bookham
C3 Guildford
E3 Ham
C5 Hambledon
G3 Hascombe
D5 Haslemere
H4 Headley
H2 Hershman
G2 Hindhead
E4 Holmbury St Mary
D6 Hook
C5 Horley
D4 Horne
E2 Horsell
E4 Kew
D1 Kingston-on-
Thames
H3 Leatherhead
E3 Leigh
F3 Leith Hill
H4 Limpsfield
H5 Lingfield
C5 Little Bookham
B4 Longcross
H5 Long Ditton
E3 Lower Kingswood

E4 Morden
C4 Mortlake
F1 Newdigate
C5 Normandy
C5 Nutfield
F3 Oakwood
E6 Ockham
D3 Ockley
E5 Outwood
G5 Oxted
F2 Paper Harow
H5 Petersham
C3 Pirbright
F1 Puttenham
F2 Pyrford
E3 Ranmore
F3 Redhill
G4 Reigate
F1 Richmond
D3 Ripley
H3 Sanderstead
B4 Seale
E2 Send
F4 Shalford
D5 Shamley Green
F2 Shere
D4 Shirley
G4 Stoke
G2 Stoke D'Abernon
F4 Surbiton
G2 Sutton

F2 Tandridge
F1 Tatsfield
F5 Thames Ditton
G4 Thorpe
C4 Thursley
D3 Tilford
E6 Titsey
D3 Tongham
C2 Virginia Water
G2 Wallington
F3 Walton-on-
the-Hill
E2 Walton-on-
Thames
C4 Wanborough
H3 Warlingham
B5 Waverley Abbey
D4 West Clondon
E4 Westcott
D4 West Horsley
E2 West Molesey
D2 Weybridge
E3 Whiteley
F1 Wimbledon
C2 Windlesham
D3 Wisley
C5 Witley
D3 Woking
H3 Woldingham
D5 Wonersh
G3 Woodmansterne
C4 Worlesdon
E4 Wotton

Capel
Carshalton
Caterham
Chaldon
Charlwood
Cheam
Chelsham
Chertsey
Chessington
Chiddingfold
Chilworth

F5 Farleigh
G2 Farncombe
H3 Farnham
G3 Felbridge
F5 Fetcham
F2 Frensham
H3 Friday Street
D2 Frimley
G6 Gatton
D4 Godalming
Godstone

H3 Leatherhead
E3 Leigh
F3 Leith Hill
H4 Limpsfield
H5 Lingfield
C5 Little Bookham
B4 Longcross
H5 Long Ditton
E3 Lower Kingswood
Malden
Merrow
Merstham
Merton
Mickleham
Mitcham

F2 Shere
D4 Shirley
G4 Stoke
G2 Stoke D'Abernon
F4 Surbiton
G2 Sutton

H3 Sanderstead
B4 Seale
E2 Send
F4 Shalford
D5 Shamley Green
F2 Shere
D4 Shirley
G4 Stoke
G2 Stoke D'Abernon
F4 Surbiton
G2 Sutton

SUSSEX—KEY TO THE MAP ON PAGE 7115

Albourne
Alicton
Aldingbourne
Alfriston
Amberley
Angmering
Appledram
Ardingly
Arlington
Arundel
Ashburnham
Ashington
Ashurst
Balcombe
Barcombe
Barnham
Battle
Beckley
Beddingham
Bepton
Bersted
Berwick
Bexhill
Bignor
Billingshurst
Binsted
Birdham
Bishopstone
Bodiam
Bognor
Bolney
Bosham
Botolphs
Boxgrove
Bramber
Brede
Brightling
Brighton
Broadwater
Bunton
Burgess Hill
Burpham
Burton
Burwash
Bury
Buxted

G4 Catsfield
K5 Chailey
C5 Chalyngton
K6 Chichester
D4 Chiddingfold
E6 Chidham
B6 Chithurst
H2 Clapham
L5 Clayton
D5 Climping
M4 Coates
F4 Cocking
F4 Coldwaltham
H2 Coleman's Hatch
J4 Coolham
C6 Coombes
N4 Cowfold
Q3 Crawley
J5 Crowborough
B4 Crowhurst
C6 Cuckfield
K5 Dallington
N5 Denton
D4 Dicker
E3 Diddingfold
D5 Ditchling
B6 Donnington
K6 Dunton
Q3 Earham
C6 Easebourne
G3 East Blatchington
A6 Eastbourne
F5 East Chiltington
C5 Eastdean
F5 (Eastbourne)
O4 East Dean
M3 (Goodwood)
H6 Eastergate
F6 East Grinstead
F4 East Hoathly
H4 East Preston
D5 East Wittering
C4 Edburton
M3 Elsted
D4 Eridge
K3 Etchingham

N4 Ewhurst
J4 Fairlight
K5 Falmer
B6 Felpham
A6 Fernhurst
B3 Ferring
E5 Findon
H4 Firle
D6 Fishbourne
D4 Fittleworth
B4 Fletching
D4 Flimwell
J2 Ford
J2 Forest Row
E3 Framfield
F5 Frant
F3 Friston
Q2 Fulking
N4 Glynede
H3 Goodwood
M4 Goring
K6 Graffham
L5 Greatham
B4 Guestling
H4 Hadlow Down
B6 Hailsham
C4 Hamsey
C5 Hangleton
C3 Hardham
K6 Hartfield
L6 Harting
J4 Hastings
L6 Haywards Heath
L6 Heathfield
C4 Hellingly
C5 Heyshott
J1 Hollington
K4 Hooe
E6 Horsham
A7 Horsted Keynes
G5 Houghton
B4 Hove
L2 Hurstmonceux
N3 Hurstpierpoint

O3 Icklesham
P4 Iden
H5 Ifield
C6 Iford
C3 Iping
E6 Isfield
E5 Itchingfield
K5 Jevington
B6 Keymer
D4 Kingston
J3 Kingston-by-Sea
N2 Kirdford
D6 Lancing
J2 Laughton
K4 Lavant
L2 Lewes
L6 Linch
Q5 Linchmere
J5 Lindfield
J5 Littleington
E6 Littlehampton
C4 Little Horsted
D4 Lodsworth
O4 Lullington
K3 Lurgashall
L5 Lyminster
J4 Madehurst
L5 Mardens, The
G5 Maresfield
D4 Mayfield
K2 Middleton
A4 Midhurst
O5 Milland
H3 Mountfield
L4 Netherfield
L4 Newhaven
G4 Newick
G4 Newtimber
O5 Ninfield
M5 Northiam
F2 North Mundham
J2 North Stoke
D5 Nuthurst
G6 Ore
M5 Oving
G4 Ovingdean

P4 Pagham
P3 Parham
G1 Partridge Green
J5 Patcham
B3 Patching
J4 Peasmarsh
E2 Penhurst
L6 Pett
H4 Petworth
J5 Pevensey
G5 Piddlinghoe
D3 Playden
F5 Plumpton
H4 Poling
B5 Portslade
J5 Poyning
B3 Preston
B2 Pulborough
H3 Pyecombe
D6 Racton
K4 Ringmer
C3 Robertsbridge
K6 Rodmell
C3 Rogate
D5 Rotherfield
D5 Rottingdean
K3 Rumboldwhyke
L3 Rusper
D6 Rustington
B3 Rye
N3 Salehurst
N4 Salvington
J6 Seaford
J3 Selescombe
G4 Selham
O5 Selmeston
B7 Selsey
B6 Shermanbury
D5 Shipley
F3 Shoreham
O5 Sidlesham
C5 Singleton
H6 Slaugham

Slindon
Slinfold
Sompting
Southeast
South Stoke
Southwick
Stanmer
Stansted
Stedham
Steyning
Stopham
Storrington
Stoughton
Streat

C5 Sullington
E2 Sutton
F5 Tangmere
J5 Tarring Neville
D5 Telscombe
G5 Terwick
G5 Thakenham
H5 Thorney
A5 Ticehurst
B5 Tillington
F5 Tortington
D4 Treford
D4 Trotton
H5 Turner's Hill
A4 Twineham

E4 Uckfield
D4 Udimore
C5 Upper Beeding
J6 Up Waltham
B3 Wadhurst
E4 Walberton
A6 Waldron
M2 Warbleton
G3 Warminghurst
D5 Warnham
B4 Wartling
B3 Washington
H2 West Blatchington
G4 Westbourne

J3 West Chiltington
P4 West Dean
F5 (Chichester)
C4 Westdean (Seaford)
Westfield
M2 West Grinstead
C5 Westham
L4 Westhampnett
L4 West Hoathly
E4 West Itchenor
F2 West Lavington
M5 Westmeston
E5 West Stoke
A5 West Tarring
A5 West Wittering

E4 Whatlington
N4 Wiggoholt
E4 Willington
L6 Willington
L5 Winchelsea
P4 Wisborough Green
D3 Wiston
F5 Witherham
K2 Wivelsfield
H3 Woolavington
C4 Woolbeding
B3 Worth
H2 Worthing
F6 Yapton
D6

WARWICKSHIRE—KEY TO THE MAP ON PAGE 7128

A1 Alcester
C6 Alderminster
D5 Allesley
C8 Alveston
D3 Anasley
D3 Arley
B4 Arrow
D6 Ashow
D4 Astley
B4 Aston
Aston Cantlow
Atherstone
D3 Austrey
F8 Avon Dassett

B8 Burton Dassett
C6 Burton Hastings
D5 Butler's Marston
C8 Caldecote
D3 Castle Bromwich
D4 Chadshunt
B4 Chalcote
D6 Cherington
D4 Chesterton
B4 Chilvers Coton
B7 Church Lawford
D3 Churchover
D2 Claverdon
F8 Clifford Chambers
C6 Clifton-on-

E8 Harborne
F4 Harborough Magna
E4 Harbury
C3 Hartshill
B4 Haseley
E8 Hatton
D8 Henley-in-Arden
D10 Hillmorton
E7 Honington
E4 Hunningham
F5 Idlicote
G5 Ilmington
C7 Kenilworth
C8 Kineton
G5 Kingsbury
C4 King's Norton
D8 Kinwarton
D8 Knowle
D8 Ladbroke
E9 Lapworth
F4 Lea Marston
D4 Leamington
B7 Leamington
E5 Hastings
D6 Leek Wootton
E8 Lighthorne
E6 Lillington
B8 Little Compton
F6 Long Compton
A4 Long Itchington
B3 Long Marston
D9 Loxley
B8 Luddington
C3 Mancetter
F8 Marton
D4 Maxstoke
E4 Merevale
F6 Meriden
D2 Middleton
D6 Minworth
D9 Monks Kirby
C5 Moreton Morrell
C5 Moseley

A4 Nether Whitacre
F5 Newbold-on-Avon
E7 Newbold Pacey
E3 Newton Regis
C6 Northfield
D6 Norton Lindsey
C6 Nuneaton
G6 Offchurch
D9 Oxhill
D9 Packington
C9 Packwood
D6 Pillerton Hersey
E8 Polesworth
C3 Preston Bagot
A5 Preston-on-Stour
B7 Priors Hardwick
C5 Priors Marston
F7 Quinton
C6 Radway
C3 Ratley
D6 Rowington
D6 Rugby
F6 Ryton-on-

C3 Sutton Coldfield
F5 Sutton-under-Brailes
D8 Tanworth-in-Arden
D1 Temple Balsall
E3 Temple Grafton
E7 Tidmington
D9 Tredington
C4 Tysoe
C6 Ufton
D9 Ullenhall
D2 Walsgrave-on-Sowe
C6 Walton
F8 Wappenbury
G7 Warmington
C9 Warwick
E9 Wasperton
E9 Water Orton
C6 Weddington
G5 Welford-on-Avon
D8 Wellesbourne
E5 Weston-on-Avon
B8 Weston-under-Wetherley
D1 Whatcote
A5 Whichford
C4 Whitchurch
D7 Whitnash
E4 Willoughby
D9 Willmote
G7 Wishaw
D3 Withbrook
C2 Wixford
D7 Wolfhamcote
C5 Wolston
F7 Wolverton
B7 Wolvey
F7 Wootton Wawen
E5 Wormleighton
E6 Wroxall
C8 Wyken
B7 Yardley

Baddesley Clinton
Baddesley Ensor
Baginton
Barcheston
Barford
Barton-on-the-Heath
D10 Baxterley
D3 Bearley
C7 Beaudesert
D4 Bedworth
E3 Bentley
D5 Berkswell
B8 Bickenhill
B8 Bidford
B8 Billisley
B8 Bilton
B8 Binley
B8 Binton
F6 Birdingbury
B8 Birmingham
D7 Bishop's Tachbrook
D7 Bournville
B8 Bourton-on-Dunsmore
D10 Brailes
F5 Brinklow
G5 Brownsover
E6 Bubbenhall
D6 Budbrooke
E4 Bulkington

C6 Dunsmore
D3 Coleshill
E5 Combrook
D10 Compton Verney
D7 Compton Wynates
D10 Copston Magna
D3 Corley
D3 Coughton
C7 Coventry
C7 Cubbington
E4 Curdworth
D5 Dorsington
D5 Dunchurch
B8 Edgbaston
B8 Enderington
B8 Ettington
F6 Exhall
B8 Exhall (Coventry)
B4 Fenny Compton
D7 Fillongley
A5 Foleshill
A5 Frankton
F6 Grendon
D10 Guy's Cliffe
F5 Halford
G5 Hampton-in-Arden
E6 Hampton Lucy
D6 Handsworth

A4 Leamington
D6 Leek Wootton
E8 Lighthorne
E6 Lillington
B8 Little Compton
F6 Long Compton
A4 Long Itchington
B3 Long Marston
D9 Loxley
B8 Luddington
C3 Mancetter
F8 Marton
D4 Maxstoke
E4 Merevale
F6 Meriden
D2 Middleton
D6 Minworth
D9 Monks Kirby
C5 Moreton Morrell
C5 Moseley
D8 Napton-on-the-Hill

A4 Nether Whitacre
F5 Newbold-on-Avon
E7 Newbold Pacey
E3 Newton Regis
C6 Northfield
D6 Norton Lindsey
C6 Nuneaton
G6 Offchurch
D9 Oxhill
D9 Packington
C9 Packwood
D6 Pillerton Hersey
E8 Polesworth
C3 Preston Bagot
A5 Preston-on-Stour
B7 Priors Hardwick
C5 Priors Marston
F7 Quinton
C6 Radway
C3 Ratley
D6 Rowington
D6 Rugby
F6 Ryton-on-Dunsmore
E8 Salford Priors
D11 Seckington
D10 Selly Oak
D10 Sheldon
F7 Sherbourne
C9 Shilton
D8 Shipton-on-Stour
C8 Shotteswell
E3 Shuckburgh
F6 Shustoke
C4 Shutterton
D3 Snitterfield
D5 Solihull
C3 Southam
C3 Sperrall
F4 Stockton
D8 Stoke
B5 Stoneleigh
F7 Stratford-on-Avon
F7 Studley

C3 Sutton Coldfield
F5 Sutton-under-Brailes
D8 Tanworth-in-Arden
D1 Temple Balsall
E3 Temple Grafton
E7 Tidmington
D9 Tredington
C4 Tysoe
C6 Ufton
D9 Ullenhall
D2 Walsgrave-on-Sowe
C6 Walton
F8 Wappenbury
G7 Warmington
C9 Warwick
E9 Wasperton
E9 Water Orton
C6 Weddington
G5 Welford-on-Avon
D8 Wellesbourne
E5 Weston-on-Avon
B8 Weston-under-Wetherley
D1 Whatcote
A5 Whichford
C4 Whitchurch
D7 Whitnash
E4 Willoughby
D9 Willmote
G7 Wishaw
D3 Withbrook
C2 Wixford
D7 Wolfhamcote
C5 Wolston
F7 Wolverton
B7 Wolvey
F7 Wootton Wawen
E5 Wormleighton
E6 Wroxall
C8 Wyken
B7 Yardley

WESTMORLAND—KEY TO THE MAP ON PAGE 7145

A1 Ambleside
F3 Appleby
D8 Arnside
D3 Askham

C5 Casterton
F3 Cliburn
D8 Clifton
D3 Crackenhorpe
D3 Crosby Garrett
D3 Crosby

F8 Hartley
E2 Helsington
D2 Heversham
F3 Hutton Roof
G4 Ings

H4 Long Sleddale
D7 Lowther
D8 Mallerstang
E8 Mardale
C6 Martindale
D6 Middleton
D5 Milburn
D5 Morland
F8 Murton
G4 Natland
F2 Newbiggin
B5 Old Hutton
D7 Orton
E3 Patterdale

D5 Ravenstonedale
G5 Rydal
E3 Salsburgh
H5 Skelsmergh
D4 Stainmore
C3 Staveley
F7 Swindale
F2 Tebay
E3 Temple Sowerby
G3 Troutbeck
D7 Warcop
F2 Windermere
E7 Winstar
F5 Winton
C4 Witherslack

Bampton
Barbon
Barton
Beetham
Bolton
Bowness
Brough
Brougham
Burneside
Burton

D3 Ravensworth
F8 Crosthwaite
D2 Eamont Bridge
C3 Firbank
F6 Grasmere
E2 Great Asby
D6 Great Musgrave
E8 Great Ormside

F4 Kendal
C7 Kenmere
D2 Kirkby Lonsdale
D2 Kirkby Stephen
F6 Kirkby Thore
B5 Langdale
F4 Levens
G4 Little Strickland
G3 Long Marton

H4 Long Sleddale
D7 Lowther
D8 Mallerstang
E8 Mardale
C6 Martindale
D6 Middleton
D5 Milburn
D5 Morland
F8 Murton
G4 Natland
F2 Newbiggin
B5 Old Hutton
D7 Orton
E3 Patterdale

D5 Ravenstonedale
G5 Rydal
E3 Salsburgh
H5 Skelsmergh
D4 Stainmore
C3 Staveley
F7 Swindale
F2 Tebay
E3 Temple Sowerby
G3 Troutbeck
D7 Warcop
F2 Windermere
E7 Winstar
F5 Winton
C4 Witherslack

WILTSHIRE—KEY TO THE MAP ON PAGE 7114

A1 Aldbourne
F10 Alderbury
B3 Alderton
E6 All Cannings
C4 Allington
F9 Allington (Newton)
E6 Alton Barnes
E6 Alton Priors
D10 Alvediston
F8 Amesbury
C10 Ansty
D2 Ashton Keynes
B5 Atworth

G4 Avebury
F10 Barford
B3 St. Martin
E6 Baverstock
C4 Baydon
F9 Bemerton
E6 Berwick Bassett
E6 Berwick St. James
C11 Barwick St. John
F8 Barwick St. Leonard
C10 Biddestone
D2 Bishop's Cannings
B5 Bishopstone

E5 Bishopstone (Wilton)
E10 Bishopstrow
D10 Blunsdon
G4 St. Andrew
E10 Boscombe
E4 Box
E9 Boyton
C11 Bradenstoke
C9 Bradford-on-Avon
D5 Bratton
B6 Bremhill
G3 Brinkworth

Britford
E10 Brixton Deverill
C8 Broad Chalke
D2 Broad Hinton
F2 Brokenborough
F9 Bromham
B5 Broughton Gifford
C9 Bulford
D4 Burbage
B6 Burcombe
D5 Calne
D3 Calstone
D3 Wellington

F10 Castle Combe
B9 Castle Eaton
D10 Charlton
E4 Charlton (Pewsey)
C3 Cherhill
C5 Chilmark
B6 Chilton Foliat
F8 Chippenham
G6 Chirton
E10 Chisledon
D5 Chitterne
C5 Chittoe
D5 Cholderton

Wiltshire

Christian Malford	C4	Fittleton	F7
Chute	H7	Fonthill Gifford	C10
Clyffe Pypard	E4	Fovant	D10
Codford St. Mary	D9	Froxfield	H5
Codford St. Peter	C9	Fyfield	F5
Colerne	B5		
CollingbourneDucis	G7	Garsdon	C3
Collingbourne		Great Bedwyn	G8
Kingston	G7	Great Chalfield	D6
Compton Bassett	D5	Great Cheverell	D7
Compton		Great Somerford	C3
Chamberlayne	D10	Great Wishford	E9
Coombe Bissett	E10		
Corsham	B5	Ham	H6
Corsley	B8	Hankerton	D2
Corston	C8	Hannington	F2
Cricklade	E2	Hardenhuish	C4
Crickwell	C2	Heddington	D5
		Heytesbury	C8
Dauntsey	D3	Highway	F2
Devizes	D6	Hill Deverill	B9
Dinton	D10	Hilmarton	D4
Ditteridge	B5	Hilperton	B6
Donhead		Hindon	C9
St. Andrew	C10	Holt	B6
Donhead St. Mary	C10	Horningsham	B8
Downton	F11	Huish	F6
Draycot-Cerne	C4	Hullavington	C3
Durnford	F9	Idmiston	F9
Durrington		Imber	C8
		Inglesham	F1
East Coulston	C7	Keevil	C6
East Grafton	G6	Kilminster	A9
East Kennett	E5	Kingston Deverill	B9
East Knoyle	B10	Kingston	C4
Easton	F6	St. Michael	C7
Easton Grey	B3	Knook	C8
Ebbesborne Wake	D10	Lacock	C5
Edington	C7	Langley Burrell	E2
Enford	C7	Latton	E2
Erlestoke	C7	Leigh	E2
Etchilhampton	D6	Leigh Delamere	B4
Everleigh	F7	Liddington	F3
		Limley Stoke	A6
Farley	G10	Little Bedwyn	G5
Fifield Bavant	D10		
Figheledean	F8		
Fisherton-de-la-Mere	D9		

GUIDE TO 10,000 PLACES

Little Hinton	G3	Little Langford	D9
Little Somerford	C3	Littleton Drew	B4
Longbridge Deverill	B8	Luckington	B3
Ludgershall	G7	Lydiard Millicent	E3
Lydiard Tregoze	E3	Lyneham	D4
Maiden Bradley	A9	Manningford	F6
Malmesbury	C3	Manningford Bruce	F6
Marden	D7	Market Lavington	D7
Marlborough	F5	Melksham	C6
Mere	B10	Mildenhall	B9
Milton	D4	Milston	D4
Milton Lilbourne	F6	Minety	C9
Monckton Deverill	B9	Monckton Farleigh	A5
Netheravon	F7	Nettleton	B4
Newton Tony	G8	North Bradley	B7
North Wraxall	B4	Norton Bavant	C8
Oaksey	D2	Oare	F6
Odstock	F10	Ogbourne	C4
Ogbourne	C8	St. Andrew	C8
Ogbourne	C8	St. George	C5
Old Sarum	F9	Orcheston	E2
Orcheston	E2	Patney	B4
Pewsey	F3	Pickwick	B5
Pickwick	B5	Potterne	D6

Poulshot	C6	Preshute	E3
Purton	B4	Ramsbury	G5
Rodbourne	B3	Cheney	F3
Rollstone	E8	Rowde	D6
Rushall	E7	Salisbury	F10
Savernake	G6	Seend	C6
Semington	C6	Semley	C10
Shalbourne	H6	Shaw	C5
Sherrington	B3	Sherston	B4
Sloughterford	F5	South Marston	F3
South Wraxall	B6	Stantlynch	F10
Stanton	B2	Stanton	E6
Stanton St. Bernard	E6	Stanton St. Quintin	C4
Stapleford	E9	Steeple Ashton	C7
Steeple Langford	D9	Steeple Langford	D9
Stockton	E8	Stonehenge	E8
Stourton	A9	Stratford-sub-Castle	E9
Stratford Tony	E10	St. Margaret	F3
Sutton Benger	C4	Sutton Mandeville	D10
Sutton Venny	C8	Swindon	F3
Teffont Evias	D10	Teffont Magna	D9
Tidcombe	G6	Tidworth	G7
Tilleshed	D8		

Worcestershire

Tisbury	C10	Tockenhay	D4
Tollard Royal	C11	Trowbridge	B6
Tytherton	C4	Upavon	F7
Upton Lovell	C8	Upton Scudamore	B8
Urchfont	D6	Warborough	F3
Warminster	B8	Westbury	B7
West Dean	G10	West Gristead	F10
West Harnham	F10	West Kingdon	A4
West Lavington	D7	Westwood	B6
Whaddon	B6	Whiteparish	G10
Wilcot	F6	Wilsford	E6
Wilsford	F9	Wilton	E10
Winkfield	B7	Winsley	A6
Winterbourne Bassett	E4	Winterbourne Gunner	F9
Winterbourne Monckton	E5	Winterbourne Stoke	E8
Winterslow	G9	Woodford	E9
Wootton Bassett	E3	Wootton Rivers	F6
Wroughton	F4	Wylve	D9
Yatesbury	E5	Yatton Keynell	B4
Zeals	A10		

WORCESTERSHIRE—KEY TO THE MAP ON PAGE 7123

Abberley	C4	Church	H7
Abberton	F6	Honeybourne	E3
Abbots Morton	F6	Churchill	E6
Alfrick	C6	Churchill (Worcester)	F6
Alvechurch	F4	Church Lench	D5
Areley Kings	D4	Claines	G7
Ashton-under-Hill	F8	Cleeve Prior	E3
Astley	G8	Clent	C5
Aston Somerville	G8	Clifton-on-Teme	F3
Badsey	G7	Cofton Hackett	C6
Barnt Green	B4	Cotheridge	E2
Bayton	F4	Cradley	E7
Beckford	F8	Croome D'Abitot	F7
Belbroughton	E3	Crothorne	E6
Beneworth	G7	Crowle	E4
Beoley	G4	Crutch	E7
Berrow	D9	Defford	E7
Besford	E7	Dormston	F6
Bewdley	C3	Doverdale	D5
Birlingham	E7	Droitwich	E5
Birtsmorton	D8	Dudley	E2
Bishampton	F6	Earl's Croome	E8
Bockleton	A5	Eastham	B4
Bradley	F5	Eckington	E8
Bransford	D6	Eldersfield	D9
Bredicot	E6	Elmbridge	E8
Bredon	E8	Elmley Castle	F8
Bredon's Norton	E8	Elmley Lovett	D4
Bretforton	G7	Evesham	G7
Bricklehampton	F7	Feckenham	F5
Broadwas	C6	Fladbury	F7
Broadway	G6	Flyford Flavell	F6
Bromsgrove	F4	Frankley	F3
Broom	E3	Grafton	F8
Broughton Hackett	E9	Grafton Flyford	F6
Bushley	E9	Grafton Manor	E4
		Great Comberton	F7
		Great Malvern	C7

Great Witley	C5	Hadzor	E5
Grimley	D5	Hagley	E3
Halesowen	F2	Hallow	D6
Hampton	F7	Hampton Lovett	E5
Hanbury	F5	Hanley Castle	D7
Hanley William	B5	Hartlebury	D4
Harvington	E3	Harvington (Evesham)	G7
Heighington	C4	Hill Croome	E8
Hill Croome	E8	Himbleton	E5
Hindlip	E5	Hinton-on-the-Green	F8
Holt	F8	Huddington	D5
Huddington	D5	Inkberrow	F6
Ipsley	G5	Kemerton	E8
Kemerton	E8	Kempsey	D7
Kidderminster	D3	King	F6
King	F6	Knightsford Bridge	C6
Knightsford Bridge	C6	Kyre Magna	A5
Kyre Magna	A5	Leigh	C6
Leigh	C6	Lindridge	F7
Lindridge	F7	Little Comberton	C8
Little Comberton	C8	Little Malvern	D8
Little Malvern	D8	Lower Sapey	B5
Longdon	B5	Lulsley	C6

Madresfield	D7	Mable	B4
Martin Hussingtree	E5	Martley	C5
Martley	C5	Middle Littleton	G7
Naunton	F7	Beauchamp	F6
Netherton	F8	Spetchley	D7
Newland	F6	Stanford-on-Teme	B5
North Middle	G7	Stoke Bliss	B5
Norton	E6	Stoke Prior	E4
Norton (Kempsey)	E6	Stone	D3
Oddington	E5	Stoulton	E7
Offenham	G7	Stourbridge	E2
Oldbury	F2	Stourport	D4
Ombersley	D5	Strensham	C6
Orleton	B4	Suckley	C6
Overbury	F8	Tardebigge	F4
Pebworth	H7	Tenbury	A4
Pedmore	E3	Throckmorton	F7
Pendock	C9	Tibberton	E6
Pensax	C4	Upper Arley	C3
Peopleton	E6	Upton-on-Severn	D8
Pershore	E7	Upton Snodsbury	E6
Pirvin	F7	Upton Warren	E4
Pirton	E7		
Pixham	D7		
Powick	D6		

Queenhill	D8	Redditch	G4
Ribbesford	C4	Ripple	E8
Rochford	B4	Rock	C4
Romsley	F3	Rous Lench	F6
Rushock	E4	Rushock	E4
Wardon	E6	Welland	D8
White Ladies Aston	E6	Whittington	E6
Wichford	C5	Wick	F7
Wickhamford	F7	Widley	D4
Wolverley	D3	Worcester	D6
Wychbold	E5	Wyre Piddle	F7

YORKSHIRE—KEY TO THE MAPS ON PAGES 7138-7140

Aberford	M12	Birdsall	Q9	Chapel-le-Dale	C8	Farsley	J13	Haworth	G13
Acaster Malbis	N12	Birkin	N14	Cherry Burton	S12	Featherstone	L14	Hawsker	R4
Acklam	Q9	Birstall	J14	Chop Gate	N5	Felixkirk	M7	Haxby	O10
Acklam (North Riding)	M2	Birstwith	J10	Church Fenton	N13	Felkirk	L16	Hayburn Wyke	T5
Ackworth	M15	Bishop Burton	S12	Clapham	C9	Ferrybridge	M14	Hayton	Q11
Acomb	N11	Bishophorpe	Q11	Cleasby	J3	Ferry Fryston	M14	Hazlewood	M12
Adel	K12	Bishop Wilton	Q10	Clעהheaton	H14	Fewston	H10	Headingley	K13
Adlingfleet	R14	Blubberhouses	H10	Cliffe	O13	Filey	U7	Healaugh	M11
Adwalton	J14	Bolsterstone	J18	Clifford	L12	Fimber	R9	Hebden	G9
Adwick-le-Street	N16	Boltby	M6	Clifton	H14	Findall	H6	Hebden Bridge	F14
Adwick-upon-Dearne	M17	Bolton Abbey	G10	Claughton	S5	Firbeck	N19	Heckmondwike	J14
Agglethorpe	G6	Bolton-by-Bowland	C11	Cold Kirby	N6	Firby	P9	Hedon	V13
Ainderby Steeple	K6	Bolton Hall	G6	Collingham	L11	Fishlake	O15	Helfield	D10
Airton	E13	Bolton-on-Swale	J5	Conisborough	M17	Flamborough	V8	Helm'sley	S7
Aislaby	L9	Bolton-on-Percy	N12	Conistone	F9	Flamborough		Helphorpe	O8
Aldbrough	L9	Bolton-upon-Dearne	M17	Constable Burton	H6	Head	W8	Hemingbrough	O13
Aldbrough	W12	Boroughbridge	L6	Copgrove	K9	Flockton	J15	Hemsworth	L16
Adfield	J8	Boroughby	L9	Copmanthorpe	N2	Foggathorpe	P12	Heptonstall	F14
Allerton	R7	Bossall	P9	Cottingham	S9	Folkton	T7	Heslington	O11
Allerton		Boston Spa	L11	Cottingham	T13	Foston	P9	Hessle	T14
Almauleverer	L10	Bowes	F3	Coverham	G6	Foulby	L15	Hickleton	M17
Almondbury	H15	Boynnton	U8	Cowgill	C6	Fountains Abbey	K9	High Bentham	E9
Aine	M9	Bracewell	D11	Cowick	O15	Frickley-with-Clayton		High Hoyland	M16
Altofts	L14	Bradfield	J18	Cowthorpe	S9	Fridaythorpe	M16	High Melton	K17
Amotherby	P8	Bradford	H13	Coxwold	N7	Frodingham	W14	Hilston	W13
Ampleforth	N7	Bradley	H15	Crambe	P9	Fulneck	J13	Hilton	M3
Anston	N19	Brafferton	M8	Crathorne	M4	Fylindales	S4	Hinderwell	Q2
Appleton-le-Moors	P6	Braithwell	N18	Crayke	N8			Holme-on-the-Wolds	X14
Appleton-le-Street	P8	Bramham	L12	Croft	K3	Ganton	S7	Holme-upon-Wolds	S11
Appleton Roebuck	N12	Bramhope	J12	Crofton	L15	Gargrave	E10	Spalding Moor	Q12
Appleton Wiske	L4	Bramley	M18	Cropton	P6	Garsdale	C6	Holmfirth	H16
Appletreewick	G10	Brandesburton	U11	Cudworth	L16	Garton	W13	Holwick	E1
Arden Hall	M6	Brandsby	N8	Cundall	L8	Garton-on-the-Wolds		Hooton Pagnell	M16
Arksey	N16	Brantingham	S13	Dacre	H10	Gate Helmsley	S10	Hooton Roberts	M18
Armthorpe	O16	Brayton	N13	Dalby	O8	Gawthorpe	P10	Horbury	K15
Arncliffe	E8	Bridlington	V9	Danby	H6	Gayle	E6	Hornby	J5
Arras	S12	Brighouse	H14	Danby (Egton)	P3	Giggleswick	D9	Hornsea	V11
Aske	H4	Brignall	G3	Danby Wiske	K5	Gildersome	J14	Horsforth	J12
Askern	N15	Brimham Rocks	J9	Darfield	L17	Gilling	H4	Horton-in-Ribblesdale	D8
Askham Bryan	N11	Brodsworth	M16	Darrington	M15	Gisburn	D11	Hotham	R13
Askham Richard	N11	Brompton	L5	Darton	K16	Gisdales	Q4	Hovingham	O8
Askrigg	F6	Brompton	S7	Denholme	G13	Glass Houghton	M14	Howden	P14
Aston	M19	(Scarborough)	R14	Dent	B6	Goathland	Q4	Howsham	P9
Attercliffe	L19	Broomfleet	M14	Denton	H11	Goldborough	L10	Hubberholme	E7
Atwick	V11	Brotherton	O2	Dewsbury	J14	Goodmanham	R12	Huby	N9
Auburn	V9	Brotton	H5	Doncaster	N17	Goole	P14	Huddersfield	H15
Aughton	P12	Brough	F11	Dunholme	H5	Goxhill	V11	Huddswell	H5
Austerfield	O18	Broughton	P13	Drax	O14	Grassington	F9	Huggate	R10
Austhorpe	L13	Bubwith	E8	Drighlington	J13	Great Ayton	N3	Hull	U13
Austwick	C9	Buckden	Q10	Dunsforth	M9	Great Driffield	T10	Humbleton	V13
Aysgarth	F6	Bugthorpe	P9		H5	Great Eadstone	P7	Hunmanby	U7
		Burghwallis	N16	Easby	N3	Great Givendale	Q10	Hunsingore	L10
		Burley-in-Wharfedale	H11	Easby (in Cleveland)	P2	Great Hatfield	V12	Huntington	O10
		Burnby	Q11	Easington	Y15	Great Houghton	L16	Husthwaite	N6
		Burneston	K7	(Patrington)	N8	Great Langton	K5	Hutton Bushel	S8
		Burnsall	G9	Easingwold	K14	Great Mitten	C12	Hutton	
		Burstwick	V14	East Ardsley	S6	Great Ouseburn	M9	Cranswick	T10
		Burton Agnes	U9	East Aytton	K4	Great Ribston	L10	Hutton-le-Hole	P6
		Burton Constable	V12	East Cowton	O7	Great Smeaton	K4	Hutton Lowcross	O3
		Burton Fleming	W13	East Gilling	L5	Greenfield	F17	Hutton Magna	H3
		Burton Pidsea	Q9	East Harlesley	S7	Green		Hutton Rudy	M4
		Burythorpe	P10	East Heslerton	Q13	Hammerton	M10	Huttons Ambo	Q9
		Buttercrambe	P7	Eastrington	L4	Greetland	G15		
		Butterwick	N7	East Rounton	R7	Greta Bridge	G3	Ikley	H1
		Byland Abbey		Eberston	L8	Grimethorpe	L16	Ingleby Arncliffe	M5
				Ecclesfield	G5	Grinton	G5	Ingleby Greenhow	N4
				Edlington	N17	Gristhorpe	T7	Ingleton	B8
				Egglesstone Abbey	G3	Grisbrough	Q4	Jervaulx Abbey	H6
				Egton	Q4	Guiselby	J12		
				Elland	G15	Gunthwaite	J16		
				Ellerburn	Q6			K	
				Ellerker	R13	Hackfirth	J5	Keighley	G12
				Ellerton	P12	Hackness	S6	Keld	E5
				Ellerton Abbey	G5	Halifax	G14	Kelfield	O12
				Elloughton	S14	Halshaw	W14	Kellington	N14
				Elslack	E11	Haltempreice		Kettleness	Q3
				Elstronwick	V13	Priory	T13	Kettlewell	F8
				Emley	P11	Hampole	M16	Keyingham	W14
				Eryholme	J16	Hampsthwaite	J10	Kilburn	M7
				Escrick	K4	Handsworth	L19	Kildale	O3
				Esholt	O12	Hardow	E6	Kildwick	F11
				Eston	N2	Harewood	K12	Kilnsea	T9
				Etton	S12	Harpham	U9	Kilnsey	F9
				Everingham	Q12	Harrogate	K10	Kilnwick Parcy	T11
						Hartthill	M20	Kilnwick Parcy	Q11
						Hartshhead	J14	Kilton Castle	P2
						Hartwith	J9	Kiplin	K5
						Hatfield	O16	Kirby	L13
						Hawxwell	H5	Kirby	N4
						Hawes	E6	Kirby Grindalyn	R9
						Hawsworth	H12	Kirby Hill	L9
						Hawby	N6	Kirby Hill (Richmond)	H4

Kirby Knowle	M6	Marton-in-the-	Pool	J11	Skinningrove	P2	Throapham	N19	
Kirby Misperton	Q7	Forest	N9	Preston	V13	Skipsea	V10	Thrybergh	M18
Kirby Sigston	L5	Masham	J7	Pudsey	J13	Skipton	F11	Thurnscoe	T8
Kirby Underdale	Q10	Meaux	U12			Skirwith	O12	Thwing	M16
Kirby Wiske	L6	Melsonby	J4	Queensbury	G13	Skirraugh	U12	Tickhill	N18
Kirk Bramwith	O16	Meltham	G16			Skirpenbeck	P10	Tockwith	M11
Kirkburn	S10	Menston	H12	Ramskill	H8	Slaiburn	C11	Todmorden	E14
Kirkburton	J16	Methley	L14	Raskelf	M8	Slaithwaite	Q15	Todwick	M19
Kirkby Fleetham	K5	Mexborough	M17	Rastrick	H15	Sledmere	S9	Tollerton	N9
Kirkby Malham	E10	Middleham	H6	Rathmell	D10	Sleights	R4	Tong	J13
Kirkby Malzeard	J8	Middlesbrough	M2	Ravensthorpe	J15	Slingsby	P8	Topcliffe	L8
Kirkby Moorside	P6	Middlesmoor	G8	Ravensworth	H4	Snainton	R7	Totley	K20
Kirkby Overblow	K11	Middleton	Q6	Ravensworth	H4	Snaiton	O14	Towton	M12
Kirkby Wharfe	M12	Middleton (Cowling)	F12	Rawcliffe	P14	Snape	J7	Treton	M19
Kirkdale	O6			Rawmarsh	L18	Sneaton	R3	Tunstall	W13
Kirk Deighton	L11	Middleton-on-the-		Redcar	N1	South Cave	S13		
Kirk Ella	T13	Wolds	S11	Redmire	G6	South Cowton	K4	Uggelbarnby	R4
Kirkham	P9	Middleton Tyas	J4	Reeth	G5	South Dalton	S11	Ugthorpe	Q3
Kirk Hammerton	M10	Middlepestones	J17	Reighton	U8	South Duffield	P13	Ulrome	V10
Kirkheaton	H15	Millington	Q11	Riccall	O12	South Kilvington	L7	Upleatham	O2
Kirkleatham	N2	Mirfield	J15	Ricmond	H4	South Kirkby	M16	Upper Helmsley	P10
Kirk Leavington	L3	Monk Bretton	L16	Rievaulx	N6	South Milford	M13	Upper Poppleton	N10
Kirkles	H14	Monk Fryston	M13	Rillington	R8	South Otterington	L6	Upsall	M6
Kirklington	K7	Moor Monkton	M10	Ripley	K10	Sowerby	G14		
Kirk Sandall	O16	Morley	K14	Ripon	K8	Sowerby Bridge	G14	Waddington	C12
Kirk Smeaton	N15	Moulton	J4	Rise	U12	Speeton	U8	Wadworth	N18
Kirkstall	J13	Mount Grace		Robin Hood's Bay	S4	Spennithorne	H6	Wakefield	K15
Kirksthorpe	L15	Priory	M5	Roche Abbey	N18	Spoofforth	L11	Wales	M19
Knaresborough	K10	Muker	E5	Romaldkirk	F2	Sproatley	V13	Walkington	S12
Knayton	L6	Mulgrave Castle	Q3	Romanby	K5	Sprotborough	N17	Walton	L15
Knottingley	M14	Muston	U7	Ros	W13	Stainbrough	K17	Warmsworth	N17
		Myton-on-Swale	M9	Rosedale Abbey	P5	Stainburn	J11	Warter	R11
L				Rossington	O17	Staincliffe	J14	Wath	K7
Laithkirk	E2	Naburn	Q11	Rotherham	M18	Stainforth	D9	Wath-upon-	
Langcliffe	D9	Nafferton	T10	Rothwell	K14	Stainton	M3	Dearne	L17
Langtoft	T9	Nether Poppleton	N10	Routh	U12	Stainton (Tickhill)	N18	Watton	T11
Langton	Q9	Nether Siltton	M6	Rowley	S13	Staithes	Q2	Wawne	U12
Lartington	F2	Newby Wiske	L6	Roxby	P2	Stamford Bridge	P10	Weaverthorpe	S8
Lastingham	P6	Newsham	G3	Royston	L16	Stanley	K14	Welbury	L4
Laughton-en-le-		Newton	N3	Rudston	U9	Starwick	H3	Well	J7
Morthen	N19	Newton Kyme	M12	Ruforth	N1	Starbotton	F8	Welton	S14
Laxton	Q14	Newton-upon-		Runswick	Q3	Startforth	G3	Welwick	X14
Lead	M13	Ouse	M10	Ruswarp	R3	Staveley	L9	Wensley	G8
Leake	L6	Nidd	K10	Rylstone	F10	Steeton	G12	Wentbridge	M15
Leathley	J11	Normanby	N2	Ryther	N12	Stillington	O12	Wentworth	L17
Leconfield	T12	Normanton	L14			Stillington	N9	West Aytton	S6
Ledsham	M13	Northallerton	L5	Saddleworth	F16	Stocksbridge	J17	West Bretton	K16
Ledston	M14	North Cave	R13	Saltaire	H12	Stokesley	N4	West Burton	F6
Leeds	K13	North Dalton	S11	Saltbunby-the-		Stonegrave	O7	West End	J11
Letwell	N19	North Duffield	P13	Sea	O2	Strensall	O9	West Heslerton	R8
Leven	U11	North Ferriby	S14	Salton	P7	Studley Royal	K8	West Lutton	S8
Leventhorpe	H13	North Frodingham	U10	Sanction	R12	Sutton-on-the-	M12	Weston	H11
Levisham	Q6			Sandal Magna	K15	Forest	N9	Westow	P9
Leyburn	G6	North Grimston	R9	Sand Hutton	P10	Sutton-under-		West Rounton	L4
Lightcliffe	H14	North Newbald	R12	Sandens	R3	Whitestone Cliffe	M7	West Tanfield	J7
Linton	F9	North Otterington	L6	Sawley	C11	Sutton-upon-		West Wotton	G6
Lissett	U10	North Stainley	K8	Saxton	M12	Derwent	P11	Wetherby	L11
Little Driffield	T10	Norton	N15	Scalby	T6	Swillington	L13	Wetwang	S10
Little Fryup	P4	Norton (Sheffield)	L19	Scampston	R8	Swine	U13	Wharram-le-	
Little Ouseburn	M9	Nun Appleton	R12	Scarborough	T6	Swinefleet	Q14	Street	R9
Liverton	P3	Nunburnholme	N11	Scargill	G3			Wharram Percy	R9
Lockington	T11	Nunkeeling	U11	Scawton	N7	Tadcaster	M12	Wheldrake	P11
Lockton	R6	Nun Monkton	M10	Scorbrough	T11	Tankersley	K17	Whinby	O9
Lofthouse	K14	Nunnington	O7	Scott	K10	Temple Hirst	O14	Whiston	M18
Loftus	P2			Scrayingham	P10	Temple Newsam	L13	Whitby	R3
Londesborough	R11	Oakworth	G12	Scruton	K6	Terrington	O8	Whitgift	Q14
Long Addingham	G11	Octon	T8	Seamer	T6	Thicket Priory	P12	Whitkirk	L13
Long Marston	M11	Old Byland	N6	Seamer (in	M3	Thimbleby	M5	Whitwood	L14
Long Preston	D10	Old Malton	Q8	Cleveland)	Q12	Thirkeleby	M7	Whorlton	M10
Long Riston	U12	Ormesby	N2	Seaton Ross	B6	Thirsk	L7	Wicksley	M18
Loversall	N17	Osbaldwick	O11	Sedbergh	O13	Thixendale	R9	Wighill	M11
Low Bentham	B8	Osgodby	O13	Selby	M8	Thoralby	F6	Wilderfoss	P11
Low Catton	P10	Osmotherley	M5	Sessay	D9	Thorganby	P12	Willyerby	T7
Low Hutton	P9	Osett	K15	Settle	Q8	Thornaby	M8	Wilton	N12
Lowthorpe	U9	Oswaldkirk	O7	Settrington	L15	Thornaby-on-Tees	M2	Wilton (Pickering)	R7
Luddenden	G14	Otley	J12	Sharlow	K8	Thorne	P16	Winstead	W14
Lund	S11	Ottringham	W14	Shaw Mills	J9	Thornhill	L12	Wintringham	R8
Lythe	Q3	Oulton	N8	Sheffield	L19	Thornton	J15	Wistow	N13
Malham	E9	Over Newton	X14	Sherburn	S7	Thornton Dale	G13	Withernsea	X14
Maltby	N18	Owston	N16	Sherburn-in-	M13	Thornton Dale	Q7	Withernwick	V12
Malton	Q8	Owthorne	X13	Elmet	O9	Thornton-in-		Wold Newton	T8
Manfield	J3			Sheriff Hutton	R12	Craven	E11	Womersley	N15
Mappleton	V12	Pannal	K11	Shipton Thorpe	U11	Thornthorpe		Woodkirk	J14
Market Weighton	R12	Pateley Bridge	H9	Siggleshorpe	K16	Lonsdale	B8	Woolley	K16
Markington	K9	Patrick Brompton	J6	Silkestone	P6	Thornthorpe-le-Clay	O9	Worsborough	K17
Marr	N16	Patrington	W14	Sinnington	X15	Thornthorpe-le-Moor	L6	Wortley	K17
Marrick	G5	Paul	V14	Skeffling	M16	Thornthorpe-le-Street	L6	Wragby	K15
Marsden	G16	Penistone	J17	Skelbrooke	L9	Thornthorpe Steward	H6	Wressell	P13
Marske	G3	Pickering	Q7	Skelton	O2	Thornthorpe Watlass	J6	Wycliffe	H3
Marske-by-the-Sea	O2	Pickhill	K7	Skelton (in	N10	Thorp Arch	M11	Wykeham	S7
Marton	L9	Plompton	L10	Cleveland)	T10	Thorp Bassett	R8		
Marton (in		Pocklington	Q11	Skelton (York)	T13	Thorp Perrow	J6	Yarm	L3
Cleveland)	M3	Pontefract	M14	Skerne		Thorp Salvin	N20	Yeadon	J12
Marton-in-Craven	E11			Skidby		Threshfield	F9	Yedingham	R7
								York	O11

THE WATERWAYS OF ENGLAND

The Only Known List of Our Rivers and Canals

WE give in the following pages the only known alphabetical list of the rivers of England. Though the principal rivers of our land with their tributaries have been described in many books, there exists nowhere a complete list of all our rivers. We have appealed in vain to our Ordnance Survey for an index of them, and to the archives of our Government Departments.

There is no complete list of our rivers in existence, and none printed at all equal to this we now include in these pages. Our list is of the 1200 rivers and canals of England which are over five miles long, and it gives the chief county through which each waterway flows, and the river to which it is a tributary if it does not flow direct into the sea.

The gathering together of our waters in this way reveals some remarkable facts. How short are most of the names ! There are nearly a hundred little names of one syllable. And what a large number bear the same name—Don, Esk, Frome, Stour, and Avon. Most names of our rivers preserve words used by our Celtic forefathers centuries before the Roman invasion. Roman, Saxon, Dane, and Norman would give a name to a village or a town, but would not change the name of a river or a hill.

How pleasant, too, is the sound of these names ! Some are quaint, some beautiful ; many are as pleasant to the ear as the murmuring of the streams over their pebbles.

A

Abberd Brook. A Wiltshire stream joining the Marden at Calne.

Abbey Brook. A Yorkshire tributary of the Derwent about four miles long.

Acton Burn. A small tributary of the Derwent in Northumberland.

Adur. Rising near Horsham it flows 20 miles through Sussex to Shoreham.

Aglionby Beck. A small stream flowing into Shield Water, Cumberland.

Aira Beck. A five-mile river flowing to Ullswater Lake, with a waterfall of 80 feet known as Aira Force.

Aire. A 70-mile tributary of the Yorkshire Ouse, rising at Malham Tarn and flowing through Leeds.

Alan. See Camel.

Alconbury Brook. It rises near Thurning in Northamptonshire and flows through Huntingdonshire to meet the Great Ouse at Huntingdon.

Alde. A Suffolk river flowing from Haxted for 30 miles to Orford Haven. Its name becomes Ore at Aldeburgh.

Alder Bourne. A small Buckinghamshire affluent of the Colne.

Alham. A Somerset stream rising at Higher Alham and flowing through Alhampton to meet the Brue at Alford after a 10-mile course.

Allen. A Cornish river rising near Delabole and flowing for 10 miles into the Camel at Egloschale.

Allen. A Cornish stream six miles long, joining the Kenwyn near Truro.

Allen. A Dorset river 12 miles long flowing into the Stour at Wimbourne.

Allen. A Hampshire stream flowing six miles to the Avon at Fordingbridge.

Allen. A tributary of the South Tyne. Rising on the boundary of Durham and Cumberland, it flows 14 miles through Northumberland.

Allow. A Durham tributary of the Tyne about six miles long.

Aln. A Northumberland river rising near Alnham and flowing 16 miles to the sea at Alnmouth.

Alne. A 15-mile Warwickshire river which flows through Henley-in-Arden to join the Arrow near Alcester.

Alphin Brook. A small Devon stream flowing to the Exe near Topsham.

Alport. A small Derbyshire river rising near Alport Head and joining the Ashop near Sheffield.

Alt. A Lancashire river rising near Knowsley Park and flowing 12 miles to the sea near Formby.

Alwin. A Northumberland river flowing six miles to join the Coquet near Alwinton.

Amber. A Derbyshire tributary of the Derwent about five miles long.

Amppney Brook. A headstream of the Thames near Cricklade, Gloucestershire.

Ancholme. It rises in the Lincolnshire Wolds and runs 22 miles to join the Humber near South Ferriby.

Anker. It rises near Wolvey, Warwickshire, and flows 20 miles along the Warwickshire and Leicestershire border, past Athertonstone, into Staffordshire, where it meets the Tame at Tamworth.

Annaside Beck. A small Cumberland stream which falls into the Irish Sea near Selker Bay.

Ant. A Norfolk river rising near Antingham and flowing 12 miles to the Bure near Horning Hall.

Anton. Rising near Whitchurch, it runs 24 miles through Hampshire to Southampton Water at Redbridge. After its junction with the Test at Fullerton it is called the Test or Anton.

Apedale Beck. A small tributary of the Ure in Yorkshire.

Ark. Or Arkle Beck. It rises at Water Crag and flows 11 miles through Yorkshire to the Swale at Reeth.

Arndale Beck. A small tributary of Marke Beck in Yorkshire.

Arnfield Brook. It flows about four miles through Cheshire and joins the Etherow on the Derbyshire boundary.

Arrow. A 25-mile tributary of the Lugg near Leominster, Herefordshire, which rises in Wales.

Arrow. It rises near Alvechurch, Worcestershire, and flows 20 miles, past Alcester, where it is joined by the Alne, to meet the Avon at Salford Bridge in Warwickshire.

Artle Beck. A six-mile tributary of the Lune in Lancashire.

Arun. It rises in St. Leonard's Forest and flows 37 miles through Sussex, passing Arundel, to the sea at Littlehampton.

Ash. A Hertfordshire tributary of the Lea about eight miles long.

Ashburn. A Sussex river flowing eight miles to the sea, which it enters at Pevensey Bay.

Ashop. It rises at Ashop Head and flows eight miles through Derbyshire to the Derwent at Ashopton.

Asker. A Dorset river flowing from near Askerswell to meet the Brit near Bridport.

Attery. See Ottery.

Austwick Beck. A small tributary of the Wenning in Yorkshire.

Avill. An eight-mile Somerset river rising on Dunkerry Hill and flowing past Dunster to the Bristol Channel at Blue Anchor Bay.

Avon. A 22-mile river rising at Avon Head on Dartmoor and flowing through Devon to the sea near Thurlestone.

Avon, East. A 48-mile river rising near Devizes, Wiltshire, and flowing through Hampshire to the English Channel at Christchurch. On its banks are Amesbury, Salisbury, Fordingbridge, and Ringwood.

Avon, Little. Or Middle Avon. It rises in the Cotswold Hills near Newington Bagpath and flows 15 miles through Gloucestershire to the Severn Estuary near Berkeley.

Avon, Lower. It rises near Tetbury, Gloucestershire, and flows 75 miles through Wiltshire and Somerset to the Severn Estuary at Avonmouth, Gloucestershire. It passes Malmesbury, Chippenham, Melksham, Bradford, Bath, Keynsham, and Bristol.

Avon, Upper. It rises near Naseby in Northamptonshire, flows through Warwickshire and Worcestershire, and enters the Severn after a 96-mile course at Tewkesbury in Gloucestershire. Other towns on its banks are Rugby, Warwick, Stratford, Evesham, and Pershore.

Avon Water. Small Hampshire river rising in the New Forest and flowing into the Solent near Milford.

Axe. It rises near Cheddington, Dorset, and flows 21 miles along the Dorset and Somerset boundary into Devon, and thence through Axminster to the sea at Axmouth.

Axe. A Somerset river rising on the Mendip Hills and flowing 25 miles to the Bristol Channel at Uphill Bay.

B

Babingley. A Norfolk river flowing eight miles to the Wash near Wolferton.

Badgworthy Water. A headstream of the East Lyn, rising in Somerset and flowing along the boundary of Devon and Somerset.

Bain. A 20-mile river which rises in the Wolds and runs through Lincolnshire to the Witham near Tattershall.

Bain. An eight-mile tributary of the Ure in Yorkshire.

Balder, Or Bawder. A Yorkshire river which joins the Tees on the Durham boundary after a 10-mile course.

Baldon Brook. A small Oxfordshire affluent of the Thames, rising near Garsington.

Ban Brook

Ban Brook. A small Warwickshire affluent of the Arrow near its confluence with the Upper Avon.

Bannisdale Beck. One of the head-streams of the Mint in Westmorland.

Bar Brook. A Derbyshire stream rising on Totley moor, it flows six miles to the Derwent near Chatsworth House.

Bardale Beck. A small affluent of the Bain in Yorkshire.

Barkin Beck. A small stream which rises in Yorkshire and crosses into Westmorland to join Barbon Beck.

Barle. A 20-mile Somerset river which flows through Dulverton to join the Exe.

Barrow Brook. A Derbyshire stream, it rises near Bigmoor and flows five miles to join the River Drone near Whittington.

Barrow Burn. A stream, about seven miles long, which joins the Coquet in Northumberland.

Bartley Water. A Hampshire stream flowing into the Test near Totton.

Basingstoke Canal. A 37-mile Hampshire and Surrey canal flowing from Basingstoke in Hampshire, past Odiham, Aldershot, and Woking in Surrey, to the West Junction Canal.

Bathern. An eight-mile river rising in Somerset and flowing across the boundary into Devon, through Bampton, to meet the Exe.

Bawder. See Balder.

Bayswater Brook. An Oxfordshire tributary of the Cherwell, rising on Shotover Hill.

Beal. A small Lancashire tributary of the Roch at Rochdale.

Beane. A Hertfordshire river flowing 13 miles to join the Lea at Hertford.

Beasley Brook. It flows through Somerset to meet the Ye on near Ilchester.

Beaulieu. It rises in the New Forest near Lyndhurst and flows about 12 miles through Hampshire, past Beaulieu, to the Solent at Needsoar Point.

Beck, The. A small Lincolnshire stream which flows into the Humber.

Beck, The. A small stream which joins the Trent in Nottingham.

Beck, The. A small affluent of the Waveney at Mendham, Suffolk.

Bedburn. Or Bedburn Beck. A Durham stream, ten miles long, flowing from Egglestone Common to the Wear near Wotton-le-Wear.

Bedford, Old and New. Two artificial rivers which run almost parallel with one another for about 20 miles from the Huntingdonshire border, through Cambridgeshire, into Norfolk, where they meet the Great Ouse near Downham Market.

Beela. Or Bela. A 14-mile tributary of the Kent in Westmorland.

Beggary Brook. A small Bedfordshire affluent of the Great Ouse near Little Barford.

Belah. It rises on Stainmore and runs eight miles through Westmorland to meet the Eden near Great Musgrave.

Belchamp Brook. An Essex stream flowing into the Stour near Sudbury.

Beldon Burn. A headstream of the Derwent rising in Northumberland and passing along the boundary between Northumberland and Durham.

Bell's Burn. A small headstream of the North Tyne rising in the Cheviot Hills and flowing along the boundary between England and Scotland into Northumberland near Kielder Castle.

Belstead Brook. A Suffolk stream joining the Orwell near Ipswich.

Beult. A Kentish river running 18 miles to join the Medway at Yalding.

Beverley Brook. A small Surrey stream flowing from near Cheam, through Richmond Park, to join the Thames near Barnes.

Bevill's Leam. An artificial river running from Huntingdonshire into

WATERWAYS OF ENGLAND

Cambridgeshire, where it meets the Twenty Foot.

Bielsby Beck. A Yorkshire stream flowing from Warter to join Pocklington Canal at Bielsby.

Billing Brook. It rises near Warrington in Northamptonshire and flows through Huntingdonshire to join the Nene.

Birk Beck. A small Westmorland affluent of the Lune rising on Shap Fell.

Birmingham and Fazeley Canal. A 20-mile canal flowing from the Coventry Canal near Fazeley in Staffordshire to join the Tame Valley Canal in Warwickshire on outskirts of Birmingham.

Bishopdale Beck. A small tributary of the Ure at Castle Bolton, Yorkshire.

Biss Brook. A seven-mile Wiltshire stream which flows through Trowbridge to meet the Lower Avon near Bradford.

Black Beck. A small affluent of the Swale in Yorkshire.

Black Brook. A Derbyshire stream rising near Rushup Edge and joining the Goyt near Bugsworth.

Black Brook. A small affluent of the Soar at Loughborough, Leicestershire.

Black Brook. A Warwickshire stream which flows into Bourne Brook to join the Tame near Fazeley in Staffordshire.

Black Burn. A small stream rising in Cumberland and flowing into Northumberland to meet Hartley Burn.

Black Burn. A small tributary of the Rede in Northumberland.

Black Dub. A small Cumberland stream rising near Langrigg and flowing into the Solway Firth at Allonby Bay.

Black Line. See Line.

Blackwater. An Essex river flowing 40 miles from near Saffron Walden to the sea at Mersea Island. Between its source and Bocking it is called the Pant.

Blackwater. An 18-mile river rising in Surrey, flowing along the Surrey and Hampshire and Hampshire and Berkshire boundaries into Berkshire, where it joins the Loddon near Swallowfield.

Blackwater. A Hampshire river flowing six miles to join the Test near Nursling.

Blackwater. A Norfolk river joining the Yare at Reymerston.

Blakehope Burn. An affluent of the Rede in Northumberland about five miles long.

Bleng. A six-mile tributary of the Irt in Cumberland.

Blithe. A Warwickshire river rising near Tanworth and flowing about 20 miles to meet the Tame near Coleshill.

Bloody Beck. A small affluent of Lownorth Beck in Yorkshire.

Blyth. A river which flows 20 miles through Northumberland from near Throckington to the North Sea at Blyth.

Blyth. Rises near Laxfield and runs 15 miles through Suffolk, past Blythburgh, into the North Sea near Southwold.

Blythe. Or Blyth. A Staffordshire river joining the Trent near King's Bromley after a 22-mile course.

Bollihope Burn. A Durham stream flowing eight miles to meet the Wear near Frosterley.

Bollin. A 20-mile affluent of the Mersey in Cheshire which rises near Macclesfield.

Bond Beck. A feeder stream of the Ribble in Yorkshire.

Borrow Beck. A tributary of the Lune in Westmorland, eight miles long.

Bothel. A tributary of the Ellen in Cumberland.

Bottesford Beck. A Lincolnshire stream flowing into the Trent at West Butterwick.

Bourn Brook. An affluent of the Cam near Trumpington in Cambridgeshire.

Bourn Brook. Small affluent of the Trent near Rugeley in Staffordshire.

Bourne. A small affluent of the Pang in Berkshire.

Bretherdale Beck

Bourne. A four-mile rivulet rising in Dorset and running through Hampshire to Poole Bay at Bournemouth.

Bourne. A Surrey stream joining the Thames near Woburn Park.

Bourne. An eight-mile Warwickshire river which joins the Tame near its junction with the Blithe.

Bourne. Rising in Wiltshire, it flows across the boundary into Hampshire and thence back again into Wiltshire, where it meets the Avon on the outskirts of Salisbury after a course of 20 miles.

Bourne. It flows through Essex to join the Granta at Barlow in Cambridgeshire.

Bourne. A seven-mile rivulet rising near Upton. It flows into the Test near Hurstbourne Priors, Hampshire.

Bourne Brook. An Essex stream, it joins the Colne near Earls Colne.

Bourne Brook. A small affluent of the Tame near Fazeley in Staffordshire.

Bourne Eau. A tributary of the Glen in Lincolnshire.

Bovey. Or West Teign. A 13-mile river rising on Dartmoor and flowing through Devon to the Teign.

Bow Brook. A short affluent of the Loddon in Hampshire.

Bow Brook. It rises in Somerset and joins the Cale on the Somerset and Dorset boundary.

Bow Brook. A Worcestershire stream, about 20 miles long, joining the Upper Avon near Defford.

Bowderdale Beck. A small Cumberland tributary of the Lune.

Bowmont Water. A headstream of the Glen in Northumberland, rising in the Cheviot Hills in Scotland.

Box Brook. Or By Brook. A Wiltshire stream, 14 miles long, meeting the Lower Avon in Somerset near Bathford.

Boxford. A Suffolk river which passes through Boxford and joins the Stour after a course of about 12 miles.

Boyd. A Gloucestershire river flowing from near Chipping Sodbury to join the Lower Avon near Bitton after a seven-mile course.

Bradford. A short affluent of the Lathkill in Derbyshire.

Bradshaw Brook. A Lancashire tributary of the Tongue near Bolton.

Brain. An Essex river flowing 14 miles through Braintree to meet the Blackwater near Witham.

Brampton Beck. A tributary of the Wiske, near Romanby, Yorkshire.

Bran. An 11-mile Carmarthenshire river joining the Towy near Llandovery.

Brandon. See Ouse, Little.

Brant. A 10-mile tributary of the Witham in Lincolnshire, rising near Hough-on-the-Hill.

Brathay. A Westmorland river flowing nine miles from near Bow Fell through Ellerwater and along the boundary between Westmorland and Lancashire into Windermere.

Bray. A 14-mile affluent of the Mole in Devon, rising on Exmoor.

Breach Brook. A small tributary of the Sowe near Exhall in Warwickshire.

Breamish. The upper part of the Till in Northumberland, which rises in the Cheviots. It is called the Till after Chalton and is 18 miles long.

Brede. A Sussex river running 12 miles, past Brede and Winchelsea, to the Rother at Rye.

Bredy. See Bride.

Brennand. A small tributary of the Hodder in Yorkshire.

Brent. It flows 20 miles from near Chipping Barnet, in Hertfordshire, across the border, past Hendon, to join the Thames at Brentford in Middlesex.

Bret. In Suffolk, it joins the Stour at Higham after an 18-mile course.

Bretherdale Beck. A small affluent of Birk Beck in Westmorland.

Bride. Or Bredy. A seven-mile river flowing through Dorset to Lyme Bay.

Bridge House Beck. A small affluent of the Hodder in Yorkshire.

Brierdean Burn. A short stream running into the sea near Whitely in Northumberland.

Brig Burn. A small affluent of the Rede in Northumberland.

Brinkworth Brook. It crosses the Wiltshire and Berkshire Canal to join the Lower Avon near Great Somerford.

Brit. A nine-mile Dorset river, rising near Beauminstor and flowing through Bridport to Lyme Bay.

Broad. A Somerset tributary of the Parret, rising near Pendomer.

Broad Beck. A tributary of the Skirfare in Yorkshire.

Broad Beck. An affluent joining Cod Beck near Brawith Hall in Yorkshire.

Broadmead Brook. A Wiltshire stream flowing into Box Brook near Castle Combe.

Brook. A nine-mile tributary of the Wyre in Lancashire, rising on the Bleasdale Moors.

Broome Beck. A small affluent of the Waveney at Broome, Norfolk.

Broomhope Burn. A short affluent of the Rede in Northumberland.

Broughton Brook. A Huntingdonshire stream flowing through Broughton and Ramsey to join the Old Nene.

Brownney. Or Brune. A river flowing 17 miles through Durham to meet the Wear near Durham.

Brue. A Somerset river flowing 30 miles from Selwood Forest to Bridgewater Bay near Burnham.

Brun. A Lancashire river which joins the Calder at Burnley.

Brunstock Beck. Cumberland stream flowing into the Eden near Carlisle.

Buck Beck. A small Lincolnshire stream flowing from Waltham to the mouth of the Humber near Cleethorpes.

Bude. A Cornish river flowing eight miles from near Jacobstow, past Bude, to Bude Bay.

Bulbourne. A Hertfordshire tributary of the Gade near Hemel Hempstead, it flows through Berkhamstead.

Bulmer Beck. A Yorkshire stream flowing from the Howardian Hills to join Spittle Beck near Bulmer.

Bune. A river, about 20 miles long, rising near Somerton, Oxfordshire, and flowing into Buckinghamshire to meet the Great Ouse near Thornborough.

Bure. A 50-mile river flowing through Norfolk from Melton Park to the Yare at Yarmouth.

Burn. It flows six miles to the sea near Burnham Westgate, Norfolk.

Burn. A Yorkshire river flowing seven miles to join the Ure near Masham.

Butley. An affluent of the Ore (Alde) in Suffolk.

Butter Burn. A Cumberland tributary of the Irthing.

By Brook. See Box Brook.

Bydemill Brook. A Wiltshire tributary of the Thames, rising near Stanton Fitzwarren.

C

Cadnam. A Hampshire river flowing past Cadnam to join the Blackwater near Nursling.

Caebitra. An eight-mile river joining the Camlad in Shropshire. It rises in Wales.

Caen. A Devon river flowing into the Taw near Braunton.

Cairn. A Cumberland stream running eight miles from near Croglin to the Eden at Warwick Bridge.

Cald Beck. A six-mile affluent of the Caldew in Cumberland.

Caldew. It rises near Ennerdale Water and flows for a distance of nine

miles through Cumberland to the Irish Sea at Sellafield.

Calder. A Lancashire river flowing 15 miles to join the Ribble near Whalley. It is formed by two headstreams, one rising on Pendle Hill, the other at Calder Head.

Calder. A six-mile tributary of the Wyre in Lancashire, rising on the Bleasdale Moors.

Calder. It rises in Lancashire near Burnley and flows into Yorkshire, past Wakefield, to join the Aire, after a 45-mile course, at Castleford.

Caldew. A Cumberland river rising on Skiddaw and flowing 25 miles to meet the Eden at Carlisle. It runs underground for four miles between Holt Close and Spout's Dub.

Cale. It rises at Penselwood in Somerset and flows past Wincanton over the border into Dorset, where it joins the Stour after a 12-mile course.

Callow Brook. A headstream of Cottenham Lode in Cambridgeshire, rising near Hardwick.

Cam. A 40-mile Cambridgeshire river formed near Trumpington by the confluence of two headstreams, one flowing from near Widdington in Essex, the other called the Rhee (q.v.), from near Ashwell in Hertfordshire. It passes through Cambridge and meets the Great Ouse near Stretham.

Cam. A seven-mile tributary of the Severn in Gloucestershire.

Cam. An affluent of the Yeo, near Yeovilton, in Somerset, about 10 miles long.

Cam Beck. An eight-mile tributary of the Irthing, in Cumberland.

Cam Beck. An affluent of the Ribble, in Yorkshire. It is about five miles long.

Cam Brook. A 12-mile tributary flowing through Somerset to Wellow Brook, near its junction with the Avon.

Camel. Or Alan. A Cornish river, flowing 30 miles from near Davidstow, past Camelford, to Padstow Bay.

Camlad. Or Camlet. A 15-mile river rising in Shropshire and joining the Severn in Wales.

Can. An Essex river flowing about 12 miles to meet the Chelmer at Chelmsford.

Cant Beck. A Lancashire stream rising near Ireby and flowing into the Greta near its junction with the Lune.

Carant. Or Carrant. A 10-mile river in Gloucestershire, joining the Avon at Tewkesbury.

Carey. A Devon river flowing 12 miles from near Halwill to meet the Tamar on the Cornish boundary near Launceston.

Carlton Beck. An affluent of the Withern in Lincolnshire, about eight miles long.

Carrant. See Carant.

Carr's Burn. A small affluent of the Allen in Northumberland.

Cary. A tributary of the Parret in Somerset.

Cash Burn. A headstream of the South Tyne in Cumberland, rising on the boundary between Cumberland and Westmorland.

Castle Burn. A feeder stream of the North Tyne in Northumberland.

Cat's Water. A canalised stream flowing eight miles along the Cambridgeshire and Northamptonshire borders to join the Nene near Peterborough.

Cattle Brook. A stream which joins the Upper Avon near Hill Wootton in Warwickshire.

Caundle Brook. A small tributary of the Lidden in Dorset.

Caywood. A Norfolk river flowing into the Ouse at King's Lynn.

Cerne. A 10-mile Dorset river rising at Minertna Magna and flowing through Cerne Abbas to meet the Frome near Dorchester.

Chad Brook. A Suffolk stream flowing into the Stour at Long Melford.

Chalk Bourn. See Ebbles.

Char. A Dorset river flowing seven miles to the English Channel at Charmouth.

Chater. A 15-mile river rising in Leicestershire and flowing through Rutland to join the Welland on the Northamptonshire border near Tinwell.

Chelmer. An Essex river, about 30 miles long, flowing through Chelmsford to meet the Blackwater at Maldon.

Chelt. A Gloucestershire river rising near Dowdeswell and flowing 10 miles, through Cheltenham, to join the Severn.

Cherwell. From its source near Charwelton, in Northamptonshire, it flows into Oxfordshire where, having passed through Banbury and Oxford, it joins the Thames at New Hinksey after a 30-mile course.

Chess. An eight-mile river flowing from near Chesham in Buckinghamshire to the Colne, near Rickmansworth, in Hertfordshire.

Chet. A 10-mile tributary of the Yare in Norfolk.

Chew. A Somerset river, 14 miles long, running into the Avon at Keynsham.

Childrey Book. A small tributary of Letcombe Brook in Berkshire.

Chinnock Brook. An affluent of the Parret, near Chinnock, in Somerset.

Chivrick's Brook. A small tributary of the Stour near Sturminster Newton in Dorset.

Church Burn. A small affluent of the Allen in Northumberland.

Churn. A 16-mile river rising on the Cotswold Hills in Gloucestershire and flowing into Wiltshire to unite with other streams to form the Thames at Cricklade.

Churnet. A Staffordshire tributary of the Dove, about 20 miles long.

Clapgate Beck. A short affluent of the Swale in Yorkshire.

Clapham Beck. A small Yorkshire stream flowing through Clapham to join the Wenning.

Claw. A Devon river flowing eight miles to the Tamar on the Cornish border near North Tamerton.

Claydon Brook. A small Buckinghamshire affluent of the Bune near Padbury.

Cliff Beck. A headstream of the Seia near Sleaford, Lincolnshire.

Clipstone Beck. An affluent of the Ouzel at Leighton Buzzard, Bedfordshire.

Clist. Or Clyst. A Devon tributary joining the Exe at Topsham after flowing 10 miles.

Cloagh. A Yorkshire river flowing through Garsdale to meet the Rawthey near Sedburgh.

Cloagh Brook. A Cheshire stream rising near Shining Tor, flowing into the Dane near Allgreave.

Clow Beck. A small Yorkshire stream joining the Tees on the Durham border at Croft.

Clun. An 18-mile river flowing from the Clun Forest, through Shropshire, to the Teme at Leintwardine in Herefordshire.

Clyst. See Clist.

Coal Burn. A stream which joins the Hetton Burn to flow to the Till in Northumberland.

Coal Burn. It runs into the Blyth in Northumberland.

Cobblers Brook. An Essex stream flowing into the Lea at Waltham Abbey.

Cober. Or Loe. A Cornish river flowing nine miles, through Helston, to the sea at Looe Pool.

Cock Beck. A 10-mile tributary of the Wharfe in Yorkshire. On its banks the Battle of Towton was fought in 1461.

Cocker. A Cumberland river flowing 15 miles from Borrowdale Hause, through Buttermere and Crummock Water, to the Derwent at Cockermouth.

Cocker. A Lancashire stream flowing five miles to Morecambe Bay, near Cockerham.

Cocker Beck. A Durham river flowing from near Walworth Castle to join the Skerne at Darlington.

Cocker Beck. An affluent of the Trent at East Bridgford in Nottinghamshire.

Cockley Beck. A Cumberland tributary of the Duddon.

Cod Beck. A 22-mile tributary of the Swale in Yorkshire flowing through Thirsk.

Cogill Beck. An affluent of the Ure near Askrigg in Yorkshire.

Cole. A river formed by the confluence of several Wiltshire streams, it flows 13 miles along the Wiltshire and Berkshire boundary to join the Thames near Lechlade.

Cole. A Warwickshire river rising on the west boundary of the county and flowing 18 miles to meet the Blithe near Coleshill.

College Burn. A Northumberland stream rising in the Cheviots and joining the Glen at Kirknewton after a seven-mile course.

Coln. A Gloucestershire tributary which flows 20 miles from the Cotswolds to the Thames at Lechlade.

Colne. An Essex river rising near Steeple Bumpstead and flowing 35 miles, through Halstead, Earls Colne, Colchester, and Wivenhoe, to the North Sea at Mersea Island.

Colne. A river rising in Hertfordshire near Hatfield and flowing 35 miles along the Buckinghamshire and Middlesex boundary past Watford, Rickmansworth, and Uxbridge, to the Thames at Staines.

Colne. A 14-mile river flowing through Yorkshire, past Huddersfield, to the Calder at Cooper Bridge.

Colne Brook. A Buckinghamshire stream flowing into the Thames near Egham, Surrey.

Colton Beck. A five-mile affluent of the Leven in Lancashire, rising in the Furness Fells.

Coly. A 10-mile Devon stream flowing through Colyton to meet the Axe near Colyford.

Combe Brook. A Staffordshire stream rising near Leek and joining the Churnet near Cheddleton.

Conder. A seven-mile Lancashire river flowing into the Lune estuary at Glasson.

Cong Burn. A Durham stream flowing into the Wear at Chester-le-Street.

Connypot Beck. A small Westmorland stream joining Lune Head Beck on the Yorkshire boundary.

Coquet. A Northumberland river flowing 40 miles from Coquet Head on the Scottish border to the North Sea at Warkworth.

Corfe. A small Dorset river flowing past Corfe Castle to Poole Harbour.

Corry Brook. A Devon stream flowing six miles to join the Yarty near Axminster.

Corve. A Shropshire river flowing 12 miles to meet the Teme at Ludlow.

Cosh Beck. A headstream of the Skirfare in Yorkshire.

Costa Beck. A Yorkshire stream; rising near Keld Head, it flows into the Rye near Wykeham.

Cottenham Lode. A tributary of the Great Ouse near Cottenham in Cambridgeshire.

Count Brook. An 11-mile tributary rising near Church Stretton and joining the Severn near Count in Shropshire.

Coventry Canal. It flows 32 miles through Warwickshire from Coventry, past Nuneaton and Atherstone, to meet

the Birmingham and Fazeley Canal near Fazeley in Staffordshire.

Cover. It flows 12 miles through Yorkshire, through Coverham and along Coverdale, to join the Ure near East Witton.

Cowage Brook. It flows through Wiltshire to join the Marden near Bremhill.

Cowlledge Burn. A small affluent of the Aln in Northumberland.

Cowick. A Devon stream rising on Row Tor and joining the Dart at Two Bridges.

Cowside Beck. A small Yorkshire affluent of the Ribble.

Cradley Brook. A Herefordshire tributary of Leigh Brook.

Crake. A Lancashire river flowing from Lake Coniston to join the Leven at Greenodd.

Crammock Beck. A small stream in Cumberland flowing into the Solway Firth.

Crane. A Kentish river rising near Cranbrook and flowing 10 miles to join the Bult at Headcorn.

Crane. A 15-mile river in Middlesex flowing from near Pinner to the Thames at Isleworth.

Crane. An affluent of the Moors River, rising near Pentridge in Dorset.

Crawdunle Beck. It rises near Cross Fell and flows eight miles along the Cumberland and Westmorland boundary to join the Eden near Newbiggin, Westmorland.

Cray. It rises near Orpington and runs eight miles through Kent, past the Crays and Crayford, to the Darent near Dartford.

Creedy. An 11-mile Devon stream flowing through Crediton to join the Exe near Exeter.

Crimple Beck. A Yorkshire stream flowing 10 miles from Crimble Head to the Nidd near Walsford.

Cripsey Brook. An Essex stream, it joins the Roding at Chipping Ongar.

Croal. A nine-mile Lancashire river flowing through Bolton to join the Irwell at Farnworth.

Croasdale Beck. A small tributary joining the Hodder at Slaidburn in Yorkshire.

Croglin Water. It flows about 10 miles through Cumberland from Gilderdale Forest, through Croglin, to the Eden near Kirkoswald.

Crookburn Beck. An affluent of the Tees, flowing along the Durham and Cumberland border.

Crookdale Beck. A small affluent of Borrow Beck in Westmorland.

Crooked Oak. A Devon stream seven miles long which joins the Mole near Mariansleigh.

Crossdale Beck. A small affluent of the Ehen in Cumberland, rising on Gravel Fell.

Crouch. A 24-mile Essex river rising near Billericay and flowing into the North Sea at Holywell Point.

Crummock Beck. A Cumberland stream flowing from Catlands Hill to join the Weaver near Abbey Town.

Cuckmere. It rises near Heathfield and flows 18 miles through Sussex into the English Channel at Cuckmere Haven.

Cuffley Brook. A small stream rising in Hertfordshire and flowing into Middlesex to meet the New River near Frezy Water.

Culm. A 25-mile river rising at Culm Head in Somerset and flowing across the border into Devon, past Cullompton, to join the Exe near Stoke Canon.

Cunsey Beck. A small Lancashire stream flowing from Esthwaite Water into Lake Windermere.

Curtis Burn. A stream flowing into Sweetheope Loughs in Northumberland.

D

Dacre. A Cumberland river rising near Matterdale and flowing seven miles to join the Eamont in Delamain Park on the Westmorland border.

Dagdale. A small Staffordshire stream which joins the Dove near Uttoxeter.

Dalby Beck. A stream flowing into Thornton Beck in Yorkshire.

Dalch. A seven-mile river flowing through Devon from near Washford Pyne to the Taw near Lapford.

Dale Beck. A Cumberland stream rising near Alston Moor and joining the Eden near Little Salkeld.

Dalton Beck. A feeder stream of the Swale in Yorkshire.

Dane. It rises at Dane Head on the border between Derbyshire and Staffordshire and flows 30 miles through Cheshire to meet the Weaver at Northwich.

Danes Brook. An affluent of the Barle, flowing along the Devon and Somerset border.

Darcey Lode. A Cambridgeshire affluent of the Old Croft.

Darden Burn. A small affluent of the South Tyne in Northumberland.

Darent. A Kentish river rising in Squerries Park on the Surrey border near Westerham and flowing 20 miles to join the Thames near Erith.

Dart. A seven-mile tributary joining the Exe near Bickleigh in Devon.

Dart. A Devon river rising on Dartmoor in two headstreams, the East and West Dart, which unite at Dartmeet, and flowing 36 miles to the sea at Dartmouth.

Dart, Little. It rises near Rackenford and flows 13 miles through Devon to join the Taw near Chulmleigh.

Darwen. A Lancashire river flowing 16 miles to meet the Ribble near Preston.

Dawley. An eight-mile tributary of the Rother in Derbyshire.

Dawlish Water. It rises on Haldon Moor and flows five miles to the sea at Dawlish in Devon.

Dean. A tributary joining the Bollin near Wilmslow in Cheshire.

Deanoak Brook. A tributary of the Mole in Surrey.

Dearne. A Yorkshire river rising near Upper Denby and flowing 25 miles to meet the Don at Conisborough.

Deben. A Suffolk river flowing 30 miles from near Debenham to the North Sea near Felixstowe.

Dee. A 70-mile river which flows through Cheshire to the sea. It rises in Wales and the towns of Corwen, Llangollen, Bangor, and Chester are on its banks.

Dee. Or Dent. A 11-mile tributary joining the Rawthey near Sedbergh in Yorkshire.

Deepdale Beck. A small affluent of the Yorkshire Dee, rising on Whenside.

Deer. A small Devon river flowing into the Tamar on the Cornish border at North Tamerton.

Deerness. An eight-mile affluent joining the Browney near Durham.

De Lank. A Cornish river flowing eight miles to join the Camel near Penpont.

Delf Burn. A small affluent of the Wansbeck in Northumberland.

Den Brook. It flows along the Devon and Somerset boundary into Devon to join the Exe near Oakfordbridge.

Dene. A Warwickshire river flowing nine miles from near Avon Dassett to the Avon at Charlecot.

Derry Brook. It runs from near Braydon in Wiltshire to meet the Thames near Ashton Keynes.

Derwent. A Cumberland river rising near Sea Fell and flowing 33 miles, through Derwent Water and Bassen-thwaite Lake, to the Solway Firth at Workington.

Derwent. It rises on the boundary between Derbyshire and Yorkshire and flows 60 miles through Derbyshire, passing Matlock, Belper, and Derby, to the Trent at Sawley near the border of Leicestershire.

Derwent. It flows 30 miles from near Allenheads in Northumberland, along the Northumberland and Durham border, into Durham, where it meets the Tyne at Derwent Haugh.

Derwent. A 57-mile river in Yorkshire rising on Sleights Moor and joining the Yorkshire Ouse near Barmby-on-the-Marsh.

Devils Brook. A Dorset stream flowing six miles to join the Piddle at Athelhampton.

Devils Water. A Northumberland river running 13 miles to meet the Tyne near Corbridge.

Devon. An 18-mile river rising near Eaton in Leicestershire and flowing into the Trent at Newark in Nottinghamshire.

Dhoo. A six-mile stream in the Isle of Man flowing into the sea at Douglas.

Dibb. A small affluent of the Wharfe near Burnsall in Yorkshire.

Dickler. Or Dikler. A Gloucestershire tributary of the Windrush.

Diddington Brook. A small tributary of the Great Ouse near Offord Cluney in Huntingdonshire.

Ding. A tributary of the Isle near Puckington in Somerset.

Diyelish. A six-mile tributary joining the Stour near Sturminster Newton in Dorset.

Doe Lea. A Derbyshire stream rising near Tibshelf and flowing nine miles to join the Rother near Renishaw.

Don. A Durham river rising near Great Usworth and flowing about 10 miles to meet the Tyne at Jarrow.

Don. A small tributary of the Brun near Burnley in Lancashire.

Don. It rises on the moors near the Cheshire border and flows through Yorkshire, past Sheffield, Rotherham, and Doncaster, to join the Ouse at Goole after a 70-mile course. The part between Snaith and Goole is artificial and called the Dutch River.

Don, Little. One of the headstreams of the Don, joining it at Haywood in Yorkshire.

Don, Old. It flows along the boundary between Yorkshire and Lincolnshire to join the Trent near its mouth.

Doniford Stream. It flows seven miles through Somerset into the Bristol Channel at Doniford.

Dore. A 12-mile river rising near Cusop Hill and running through Herefordshire to meet the Monnow on the Monmouthshire border at a point near Kenderchurch.

Dorn. A small tributary of the Glyme near Wootton in Oxfordshire.

Douglas. A Lancashire river flowing 15 miles from near Wigan to the estuary of the Ribble.

Dour. A Kentish stream flowing six miles to the sea at Dover.

Dove. It rises at Dove Head in Derbyshire and flows, through Dove-dale, along the boundary between Staffordshire and Derbyshire to meet the Trent at Newton Solney after a course of about 35 miles.

Dove. A small Suffolk river which joins the Waveney near Oakley.

Dove. A Yorkshire river flowing 15 miles from the Cleveland Hills to join the Rye near Salton.

Dove. An affluent of the Dearne in Yorkshire, about six miles long.

Dover Beck. A nine-mile Nottinghamshire stream which joins the Trent near Gunthorpe.

Dowles Brook. A stream flowing six miles along the Shropshire and Worcestershire boundary, through the Wyre Forest, to the Severn at Dowles.

Downholland Brook. A Lancashire stream flowing seven miles to join the Alt near Formby.

Dragley Beck. A Lancashire stream flowing into the Leven estuary near Ulverston.

Drone. A six-mile Derbyshire river flowing from Dronfield Woodhouse to join the Rother near Chesterfield.

Dub Beck. A small affluent of the Keekle in Cumberland.

Duddon. A 27-mile river rising on Wrynose and flowing between Cumberland and Lancashire to the Irish Sea near Barrow-in-Furness.

Dudwell. A Sussex river flowing eight miles from near Heathfield to join the Rother near Etchingham.

Duerley Beck. A small affluent which joins the Ure near Hawes in Yorkshire.

Dulas. A five-mile Herefordshire stream joining the Dore at Pontrilas.

Duloe Brook. A small Bedfordshire affluent of the Great Ouse near St. Neots.

Duntz. An affluent of the Yeo near Littleham, Devonshire.

Durleigh Brook. It rises in the Quantock Hills and joins the Parret at Bridgwater, Somerset.

Durtress Brook. A Northumberland stream rising near Highspoon Hill and joining the Rede near Shittleheugh.

E

Eamont. A nine-mile river flowing from Lake Ullswater along the Cumberland and Westmorland boundary to join the Eden.

Earby Beck. A Yorkshire stream which rises at Kelbrook and flows nine miles to join the Aire near Carleton.

East Row Beck. A small Yorkshire stream flowing into the North Sea at East Row.

Eaton Brook. A small affluent of the Onny in Shropshire.

Eau. A small tributary of the Trent in Lincolnshire.

Eau, Great. A Lincolnshire river flowing eight miles to the North Sea at Saltfleet.

Eau, Long. An affluent of the Great Eau at Saltfleetby All Saints, Lincolnshire.

Ebble. Or Chalk Bourn. This is a Wiltshire tributary of the East Avon, 13 miles long.

Ecclesbourn. A Derbyshire stream meeting the Derwent at Duffield.

Eden. It rises at Eden Head on the Yorkshire border near the source of the Ure and runs through Westmorland into Cumberland, where it reaches the Solway Firth at Rockliff. It passes Kirkby Stephen, Appleby, Kirkoswald, and Carlisle on its 65-mile course.

Eden. A 12-mile river rising near East Grinstead in Sussex and flowing into Kent, through Edenbridge, to the Medway at Penshurst.

Eden Brook. A Surrey headstream of the Eden.

Eggleston Beck, Great. A Durham stream rising on Bollihope Common and flowing eight miles to join the Tees near Eggleston.

Eglingham Burn. It rises on Bewick Moor, flowing by Eglingham to the Shipley Burn near Shipley, Northumberland.

Ehen. A Cumberland river flowing 12 miles from Ennerdale Water, through Egremont, to the Irish Sea at Sellafield.

Ell Brook. A Gloucestershire stream flowing into the Leadon near High-leaden.

Ellen. A Cumberland river rising on Caldbeck Fells and flowing 18 miles to the Solway Firth at Maryport.

Eller Beck. A Yorkshire affluent of the Greta.

Eller Beck. A small tributary which joins the Aire near Skipton in Yorkshire.

Ellersgill Beck. A small affluent of the Lune in Westmorland.

Ellington Brook. It rises near Raunds in Northamptonshire and joins Alconbury Brook to flow into the Ouse in Huntingdonshire.

Elsdon Burn. A Northumberland stream rising on Davysiel Common and passing through Elsdon to join the Rede near Otterburn.

Elwick Burn. It flows about five miles through Northumberland to the North Sea at Budle Bay.

Embleton Burn. Rising on Linkhall Moor, it passes by Embleton to flow into the North Sea at Embleton Bay, Northumberland.

Emm Brook. A small Berkshire stream which flows past Wokingham to meet the Loddon near Reading.

Ems. A river, about five miles long, flowing from near Stoughton in Sussex to Chichester Harbour near Emsworth in Hampshire.

Enborne. It rises in Berkshire near West Woodhay and flows 16 miles along the Hampshire border to join the Kennet near Ufton Nervet in Berkshire.

Erewash. Or Erwash. A 15-mile river rising near Kirkby-in-Ashfield and flowing along the Nottinghamshire and Derbyshire boundary to meet the Trent near Long Eaton.

Erme. It rises at Erme Head on Dartmoor near the sources of the Plym and Avon, and flows 14 miles through Devon to Bigbury Bay.

Escley Brook. A six-mile affluent of the Monnow at Longtown in Herefordshire.

Esk. Or South Esk. A Cumberland river rising at Esk Hause and running 13 miles, through Eskdale, to the Irish Sea at Ravenglass.

Esk. A 28-mile river rising in Scotland in two headstreams, the Black and the White Esk, and flowing across the border into Cumberland, past Longtown, to the estuary of the Eden.

Esk. It flows 24 miles through Yorkshire from Farndale Moor to the North Sea at Whitby.

Etton Gill Beck. A small affluent of the Rye at Helmsley in Yorkshire.

Etherow. A 15-mile river rising near the meeting-point of the boundaries of Yorkshire, Derbyshire, and Cheshire, and flowing along the Derbyshire and Cheshire border to meet the Goyt near Compstall.

Euden Beck. A small affluent of Bedburn Beck in Durham.

Evenlode. It flows 35 miles from near Longborough in Gloucestershire along the Worcestershire and Gloucestershire boundary into Oxfordshire to meet the Thames near Cassington.

Ewden. A small tributary joining the Don in Yorkshire.

Exe. A 55-mile river rising at Exe Head on Exmoor in Somerset and flowing into Devon, through Tiverton and Exeter, to Exmouth.

Eye. A Leicestershire stream flowing from near Bescaby to meet the Wreak near Melton Mowbray.

Eye Brook. Or Southern Eye. A stream rising in Leicestershire and flowing 11 miles along the Rutland border to join the Welland near Caldecott.

F

Fairham Brook. A 13-mile tributary of the Trent at Wilford in Nottinghamshire.

Fal. A Cornish river flowing 23 miles from near Tregoss, through Gram-pound and Tregony, to the English Channel at Falmouth.

Fallowlees Burn. A small affluent of Grassles Burn in Northumberland.

Filley Brook. A small Dorset affluent of the Cale.

Finham Brook. Small Warwickshire stream which flows through Kenilworth

to meet the Sowe near its confluence with the Upper Avon.

Finham Brook. A small affluent of the Sowe at Stoneleigh, Warwickshire.

Finn. A Suffolk river flowing into the Deben near Woodbridge.

Five head. A Somerset river flowing seven miles to join the Isle near Fivehead.

Fleet. An artificial river in Lincolnshire between Old South Holland Drain and New South Holland Drain.

Fleet. An eight-mile tributary of the Trent near Giron in Nottinghamshire.

Font. A 17-mile river in Northumberland flowing from near Elsdon to meet the Wansbeck at Mitford.

Fontmell Brook. It rises near Compton Abbas and flows through Dorset to meet the Stour near Hammoon.

Forest Burn. A small stream flowing through Rothbury Forest to join the Coquet in Northumberland.

Forty Foot Drain. An artificial stream in Huntingdonshire and Cambridgeshire connecting the Old Nene with the Old Bedford.

Foss. A Yorkshire river rising near Yearsley and flowing 16 miles to join the Ouse at York.

Foss. A seven-mile tributary of the Wharfe near Bolton Percy in Yorkshire.

Foston Beck. A small affluent of the Witham near Foston in Lincolnshire.

Foston Brook. A small Derbyshire stream which joins the Dove near Scropton.

Foulness. It rises in the Wolds near Everingham and flows about 15 miles through Yorkshire to meet the Market Weighton Canal.

Fowey. A Cornish river flowing 20 miles from Bodmin Moor, through Lostwithiel, to the English Channel near Fowey.

Foxdale Beck. A small affluent of Artle Beck in Lancashire.

Foxton Burn. A feeder stream of the Coquet in Northumberland.

Frating Brook. A small Essex stream flowing into the Colne at Alresford Creek.

Freshney. A small Lincolnshire river flowing into the mouth of the Humber at Grimsby.

Frome. A 35-mile river in Dorset rising at Evershot and flowing through Maiden Newton, Dorchester, and Wareham to Poole Harbour.

Frome. A Gloucestershire river rising near Brimsfield and flowing 18 miles to join the Severn at Framilode.

Frome. It flows 16 miles through Gloucestershire to meet the Lower Avon at Bristol.

Frome. A 20-mile affluent of the Lugg near Hampton Bishop in Herefordshire.

Frome. A Somerset river flowing 20 miles from near Upton Noble past Frome and along the Wiltshire boundary to the Lower Avon at Freshford.

Fryup Beck, Creat. A small affluent of the Esk in Yorkshire.

Fyn. A small tributary of the Deben in Suffolk.

Q

Gad Brook. A tiny Surrey stream which flows into the Mole.

Gade. A Hertfordshire river rising near Little Gaddesden and flowing 16 miles, through Hemel Hempstead, to join the Colne at Rickmansworth.

Gale Beck. A headstream of the Ribble in Yorkshire.

Callos Brook. An Oxfordshire stream flowing from Middleton Park to join the Ray near Islip.

Gallow Brook. A small affluent of the Great Ouse near Paxton Park in Huntingdonshire.

Gamber. A five-mile stream in Herefordshire rising at Gamber Head, it joins the Garron near L'angarren.

Gara, The. A Devon stream flowing into Start Bay near Slapton.

Garron, Or Garren. A Herefordshire river flowing 13 miles from near Oropo to join the Wye near Goodrich.

Gauness. A Durham river flowing 15 miles to join the Wear at Bishop Auckland.

Gauze Brook. A Wiltshire stream rising on the Gloucestershire border near Littleton Drew and flowing five miles to meet the Lower Avon near Little Somerford.

Gelt. A 10-mile tributary of the Irthing in Cumberland, rising at Butt Hill on the Northumberland border.

Gelt Burn. A small affluent of Knar Burn in Northumberland, rising at Butt Hill on the Cumberland border near the source of the Gelt.

Gibbs Brook. An affluent of the Eden Brook in Surrey.

Gilderdale Burn. A Cumberland stream flowing from the Gilderdale Forest along the Northumberland boundary to the South Tyme.

Gill Beck. A small tributary of the Lowther in Westmorland.

Gill Beck. A short affluent of the Greta in Yorkshire.

Gill Beck. A Yorkshire tributary of the Wharfe.

Gill Beck. A Yorkshire stream flowing to the Washburn at Fewston Reservoir.

Gill Beck, North. A small tributary of the Laver in Yorkshire.

Gillcambon Beck. A small affluent of the Caldew in Cumberland.

Gilling Beck. The upper part of Skeeby Beck, which joins the Swale near Brampton in Yorkshire.

Gilpin. An eight-mile river in Westmorland flowing from near Bowness to the estuary of the Kent.

Gipping. A Suffolk river rising in several headstreams, which unite at Stowmarket, and flowing about 12 miles to Ipswich, after which it is known as the Orwell.

Gipsey, Or Gypsey Race. A Yorkshire stream rising near Weaverthorpe and flowing 13 miles to the North Sea at Bridlington Quay. It travels three miles underground between Weaverthorpe and Wold Newton.

Gladder Brook. It flows about five miles through Worcestershire to join the Severn at Areley Kings.

Glass. A tributary joining the Dhoo at Douglas in the Isle of Man.

Glaven. A Norfolk river running 12 miles to the sea at Cley.

Glaze Brook. An affluent of the Mersey in Lancashire, about 14 miles.

Glem. A tributary of the Stour near Long Melford, Suffolk.

Glen. It rises near Somerby in Lincolnshire and flows 36 miles to meet the Welland near Surfleet.

Glen. A Northumberland river rising in two headstreams, Bowmont Water and College Burn, which unite at Kirknewton, and flowing 14 miles to join the Till.

Glenderamackin. A tributary of the Greta near Threlkeld in Cumberland.

Glenderaterra Beck. A three-mile affluent of the Greta in Cumberland.

Glyme. An Oxfordshire river flowing eight miles from near Chipping Norton, through Woodstock and Blenheim Park, to the Evenlode near Bladon.

Glynch Brook. A nine-mile stream which flows across the corners of Herefordshire, Gloucestershire, and Worcestershire to join the Leddon near Upleadon.

Gordale Beck. A headstream of the Aire in Yorkshire.

Gowy. A Cheshire river flowing 14 miles to meet the Mersey at Stanlow Point.

Goyt. It rises in Derbyshire near Buxton and flows into Cheshire to meet the Mersey at Stockport after a course of 15 miles.

Grain Beck. A feeder stream of the Derwent in Yorkshire.

Grain Beck, South. A small tributary of Ayck Beck in Durham.

Grand Union Canal. The longest canal in England. It runs from Langley Mill on the Derbyshire and Nottinghamshire border, through Nottinghamshire, Leicestershire, Warwickshire, Northamptonshire, Buckinghamshire, Hertfordshire, and Middlesex, to meet the Thames at Brentford. It has several branches and on its banks are Long Eaton, Loughborough, Leicester, Market Harborough, Warwick, Birmingham, Northampton, Buckingham, Stony Stratford, Fenny Stratford, Linslade, Aylesbury, Tring, Berkhamstead, Hemel Hempstead, Watford, Rickmansworth, Uxbridge, and Slough.

Grange Beck. A small affluent of the Ure in Yorkshire.

Granta. A Cambridgeshire river which joins the Cam near Trumpington.

Grasslees Burn. A Northumberland tributary of the Coquet.

Greatham Beck. A small Durham stream flowing into Greatham Creek at the mouth of the Tees.

Green Field Beck. A small affluent of the Wharfe in Yorkshire.

Greet. A Nottinghamshire stream flowing eight miles, through Southwell, to the Trent at Fiskerton.

Greta. A Cumberland river formed by the confluence of the Glenderamackin and St John's Beck and flowing four miles to meet the Derwent near Keswick.

Greta, Or Greeta. A 13-mile stream rising near Ingleton Fells in Yorkshire and flowing into Lancashire to join the Lune near Tunstall.

Greta. A Yorkshire river rising on the Westmorland border and flowing 15 miles to meet the Tees on the Durham border near Rokeby Park.

Grimdon Beck. A Durham stream which rises near Wingate and flows into the North Sea near Hartlepool.

Grimes Gill Beck. A small affluent of Pott Beck in Yorkshire.

Grimley Brook. A tributary of the Severn near Grimley in Worcestershire.

Grisdale Beck. A headstream of the Clough in Yorkshire.

Grizedale. One of the headwaters of the Wyre in Lancashire.

Gunnorside Gill. A five-mile tributary of the Swale, Yorkshire.

Gypsey Race. See Gipsey.

H

Haddeo. A Somerset river which joins the Exe near Bury Castle.

Haining Burn. A small Cumberland affluent of the South Tyme.

Hall Brook. A small tributary of the Sowe near Longford in Warwickshire.

Halse Water. A Somerset stream which joins the Tone near Taunton.

Halham Beck. A small Lincolnshire stream joining the Bain at Kirkby.

Haltwhistle Burn. A tributary joining the South Tyme after flowing through Haltwhistle in Northumberland.

Hamble. A Hampshire river flowing about 12 miles from near Bishop's Waltham to Southampton Water near Hamble.

Hammet. A small Kent stream flowing into the Beult near Headcorn.

Hammond Beck. A canalised stream of the South Forty Foot River in Lincolnshire.

Hamp Brook. It flows from the Quantock Hills to meet the Parret at Bridgwater in Somerset.

Hamps. A Staffordshire river, about 12 miles long, joining the Manyfold near Grindon.

Hannon. A five-mile Cornish river flowing from Davidstow Moor to meet the Camel.

Harburn. Or Harbourne. An 11-mile tributary of the Dart below Totnes in Devon.

Harden Beck. A small affluent of the Washburn in Yorkshire.

Hargill Beck. A small Yorkshire tributary of the Lune.

Harper's Brook. A Northamptonshire stream flowing 12 miles to join the Nene near Islip.

Hart Burn. A Northumberland stream rising on Ottercops Moss and flowing eight miles to meet the Wansbeck near Hartburn.

Harthope Burn. A small tributary of Wooler Water in Northumberland.

Hartoft Beck. A Yorkshire stream flowing from Rosedale Common to join the Seven.

Harwood Beck. A Durham tributary of the Tees.

Haseley Brook. A tributary which joins the Thame near Chislehampton in Oxfordshire.

Hasgill Beck. A short affluent of the Hodder in Yorkshire.

Hatchford Brook. A Warwickshire affluent of the Cole, rising near Solihull.

Hatherley Brook. A Gloucestershire stream rising near Cheltenham and joining the Severn near Gloucester.

Hawes Water Beck. It flows from Hawes Water into the Lowther at Bampton in Westmorland.

Hawkhills Beck. A Yorkshire stream rising near Stillington and joining the Kyle near Alne.

Hawkhope Burn. A stream flowing into the North Tyne at Falsstone in Northumberland.

Hayle. Or Heyl. A Cornish river flowing ten miles from near Crowan to St. Ives Bay at Hayle.

Hazlerig Beck. It rises on Long Craggs and flows through Cumberland to meet the Eden near Glassonby.

Heacham. A Norfolk river flowing into the Wash near New Hunstanton.

Hebden. An eight-mile river in Yorkshire joining the Calder at Hebden Bridge.

Heddon. A Devon stream which flows into the Bristol Channel near Trentishoe.

Helford. A Cornish river flowing 10 miles to the English Channel.

Hell Gill Beck. A Westmorland headstream of the Eden rising on the Yorkshire border at Eden Head.

Helm Beck. A tributary of the Eden near Little Ormside in Westmorland.

Helwath Beck. A small affluent of Lownorth Beck in Yorkshire.

Hems. A tributary joining the Dart at Totnes, Devon.

Hen Brook. It flows through Huntingdonshire from Waresley Park to join the Great Ouse at St. Neots.

Henmoor Brook. A Derbyshire stream flowing through Ashbourne to join the Dove at Clifton.

Hertford. A Yorkshire river flowing from near Filley to meet the Derwent near Willerby.

Hether Burn. A tributary of the Line near Kirklington in Cumberland.

Hetton Burn. An affluent of the Till in Northumberland.

Heyl. See Hayle.

Highfield Burn. A stream joining Tarsel Burn in Northumberland.

Hilton Beck. A Westmorland stream flowing seven miles to join the Eden near Great Ormside.

Hilton Brook. A Derbyshire stream which joins the Dove near Egginton.

Hindburn. A Lancashire river rising on the Yorkshire boundary and running nine miles to meet the Wenning near Hornby.

Hindwell Brook. A seven-mile stream which joins the Lugg near Byton in Herefordshire. It rises in Wales.

Hipper. It flows seven miles through Derbyshire from Holy Moor to the Rother near Chesterfield.

Hipper Beck. A small affluent of the Yorkshire Derwent.

Hiz. A 10-mile river flowing through Hitchin, Hertfordshire, to join the Ivel near Langford in Bedfordshire.

Hodder. It rises in the Bowland Forest in Yorkshire and runs 24 miles to meet the Ribble on the Lancashire and Yorkshire border at Great Mitton.

Hodge Beck. A 15-mile stream in Yorkshire flowing through Bransdale and Kirkdale to meet the Dove near Welburn.

Hoff Beck. A Westmorland stream which joins the Eden near Colby.

Hogg Beck. A Yorkshire stream flowing into Kilton Beck.

Hogsmill River. A Surrey river which joins the Thames at Kingston.

Holbeach. An artificial river between Old South Holland Drain and New South Holland Drain, Lincolnshire.

Hole. A Devonshire stream flowing into the Okement near Monk Okehampton.

Holland Brook. An Essex stream which rises near Little Bromley and flows ten miles to the North Sea near Frinton-on-Sea.

Holly Water. A small affluent of the Creedy near Upton Hellions, Devonshire.

Holme. It rises on Holme Moss and runs eight miles through Yorkshire to meet the Colne near Huddersfield.

Holton Brook. An Oxfordshire stream which meets the Thame near Holton.

Holystone Burn. A small affluent of the Coquet in Northumberland.

Holywell Burn. A small stream joining the North Tyne in Northumberland.

Hooke. A six-mile river rising near Toller Whelme and flowing through Dorset to join the Frome at Maiden Newton.

Hopeshield Burn. A small affluent of Crook Burn in Northumberland.

Horner Water. A Somerset stream flowing into Porlock Bay near Hurststone Point.

Horsbere Brook. A Gloucestershire stream flowing seven miles to join the Severn at Gloucester.

Houxty Burn. A Northumberland affluent of the North Tyne.

How Burn. A stream joining the Blyth near Ogle in Northumberland.

Howes Beck. A tributary of Hawes Water Beck near Bampton in Westmorland.

How Stean Beck. A small stream joining the Nidd near Lofthouse in Yorkshire.

Hudshope Burn. A Durham affluent of the Tees at Middleton-in-Teesdale.

Hull. A Yorkshire river flowing 23 miles from the Wolds near Great Driffield to meet the Humber at Hull.

Humber. The estuary of the Ouse and Trent, flowing 38 miles from near Blacktoft, past Hull and Great Grimsby, to the North Sea at Spurn Head. It forms the boundary between Yorkshire and Lincolnshire and is from one to seven miles wide.

Humbleton Beck. A Yorkshire stream flowing ten miles to the estuary of the Humber near Hedon.

Hunder Beck. A feeder stream of the Balder in Yorkshire.

Hundred. A Suffolk river rising near Ilketshall, flowing nine miles to the North Sea near Kessingland.

Hundred. A Suffolk river flowing into the North Sea at Thorpeness.

Huntacott Water. An affluent of the Little Dart near Chulmeigh, Devon.

Hunters Burn. A small tributary of Tarsel Burn in Northumberland.

Hutton Beck. An affluent joining the Seven near Marton in Yorkshire.

Idle. A Nottinghamshire river which rises in two headstreams, the Maun and the Medden, and flows 30 miles, through East Retford and Bawtry, to join the Trent on the Lincolnshire border at Stockwith.

Ile. See Isle.

Inchford Brook. An affluent of Finham Brook near Kenilworth in Warwickshire.

Ingle Beck. One of the headstreams of the Aire in Yorkshire.

Ingleby Beck. A feeder stream of the Leven in Yorkshire.

Ingrebourne. An eight-mile stream flowing through Essex to join the Thames near Rainham.

Inny. A Cornish river flowing 15 miles from Davidstow to meet the Tamar on the Devon border.

Ireshope Burn. A headstream of the Wear in Durham.

Irk. A Lancashire river rising near Royton and flowing ten miles to join the Irwell in Manchester.

Irt. A 12-mile river running through Cumberland from Wastwater to the estuary of the Mite and Esk near Ravenglass.

Irthing. It rises at Irthing Head on the boundary between Cumberland and Northumberland and flows along this boundary into Cumberland where it joins the Eden near Newby after a 30-mile course.

Irwell. A 30-mile river rising on the boundary between Lancashire and Yorkshire and flowing through Lancashire, past Bury and Manchester, to join the Mersey at Irlam.

Isbourne. Or Isborne. A 12-mile river flowing from near Winchcomb in Gloucestershire to meet the Avon near Evesham in Worcestershire.

Isle. A Northamptonshire river rising near Chipston and flowing 20 miles to meet the Nene near Wellingborough.

Isis. Name of the Thames between its source and its confluence with the Thame in Oxfordshire. See also Thames.

Isle. Or Ile. A 15-mile Somerset river rising near Chard and flowing past Ilminster to join the Parret.

Itchen. Or Itching. A 25-mile river in Hampshire rising near Ropley and flowing, through Winchester, to Southampton Water at Itchen.

Itchen. A six-mile tributary of the Leam at Marton in Warwickshire.

Itching. See Itchen.

Ive. A small Cumberland stream running about five miles to meet the Roe Beck.

Ivel. A 30-mile river rising in three headstreams, two in Bedfordshire and one in Hertfordshire, and flowing through Bedfordshire past Biggleswade to meet the Ouse at Tempsford.

Iwerne. A four-mile tributary joining the Stour at Stourpaine in Dorset.

J.

Jordon. A Dorset river flowing into Weymouth Bay near Stert Point.

Jagger Howe Beck. A small Yorkshire stream flowing into Lownorth Beck.

K.

Keasden Beck. A Yorkshire stream meeting the Wenning near Clapham.

Keekle. A small affluent of the Ehen at Cleator in Cumberland.

Keenshaw Burn. A tributary of Grassless Burn in Northumberland.

Keer. It rises on the Westmorland border and flows ten miles to Morecambe Bay near Carnforth, Lancashire.

Kelk Beck. A feeder stream of the Hull in Yorkshire.

Kelsey Beck. North. A tributary of the Ancholme in Lincolnshire.

Kenn. A Somerset river flowing seven miles from near Flax Bourton to the Severn Estuary.

Kenn. A Devon river rising on Great Haldon Hill and running eight miles, through Kenn, to join the Exe near Powderham.

Kennal. A Cornish river flowing about six miles to Kestronguet Creek.

Kennet. It rises on the Wiltshire Downs and flows into Berkshire, through Hungerford and Newbury, to join the Thames at Reading after a 44-mile course.

Kennet and Avon Canal. It flows 57 miles from the Kennet at Reading in Berkshire, past Newbury and Hungerford into Wiltshire, where at Burbage it goes through a tunnel over two miles long. Running past Devizes and Bradford-on-Avon into Somerset, it joins the Lower Avon at Bath.

Kennett. A river, about 15 miles long, flowing from near Kirtling in Cambridgeshire along the Suffolk and Cambridgeshire boundary to meet the Lark near Isleham.

Kensley. Or Kinsey. A Cornish stream rising near Treneagos and running ten miles, through Launceston, to join the Tamar.

Kent. A Westmorland river flowing 20 miles from High Street Fell, through Kentmere and past Kendal, to Morecambe Bay.

Kent Water. A stream flowing six miles on the Kent and Sussex border to join the Medway near Ashhurst, Kent.

Ken Wyn. A five-mile Cornish stream flowing through Truro to join the Fal.

Kershope Burn. A nine-mile stream rising on the Cumberland border and flowing into Scotland to join Liddel Water.

Kex Beck. A four-mile stream joining the Wharfe near Beamsley in Yorkshire.

Key. A short Wiltshire river which flows from near Braydon to meet the Thames near Cricklade.

Kielder Burn. A tributary of the North Tyne at Kielder Castle in Northumberland.

Kilton Beck. A small stream flowing through Yorkshire to the North Sea at Skinningrove.

Kingsdale Beck. A tributary of the Greta at Ingleton in Yorkshire.

King Water. A 14-mile tributary of the Irthing near Brampton in Cumberland.

Kinsey. See Kensley.

Kirk Beck. A small affluent of the Line at Greenholme in Cumberland.

Kirk Beck. A tributary of the Ehen in Cumberland.

Knar Burn. A stream rising on the Cumberland border and running into Northumberland to meet the South Tyne.

Knee Brook. A rivulet rising near Chipping Campden in Gloucestershire and joining the Stour near Tidmington in Worcestershire after passing along the boundary of Warwickshire.

Knucton Burn. A Durham headstream of the Derwent.

Kyle. A Yorkshire river flowing about 12 miles from near Oulston to join the Ouse at Newton.

Kym. A 16-mile river rising in Northamptonshire and flowing through Bedfordshire and Huntingdonshire through Kimbolton to join the Great Ouse near St. Neots. The part of its course between the source and Kimbolton is called the Til.

Kyre Brook. A Worcestershire stream meeting the Teme at Tenbury.

L

Laden. Or Ladden Brook. The upper part of the Frome in Gloucestershire.

Ladhill Beck. A stream joining the Rye near Hawby in Yorkshire.

Ladock. A Cornish river rising near St. Enoder and flowing, past Ladock, to the Tresillian.

Lambden Burn. An affluent of College Burn in Northumberland.

Lambourn. A Berkshire river running 16 miles from Upper Lambourn, through Lambourn, to join the Kennet near Newbury.

Lambrook Brook. It meets the Parret near Martock in Somerset.

Lambwath Stream. A rivulet reaching the North Sea near Mappleton in Yorkshire.

Langdale Beck. A five-mile affluent of Elter Water in Westmorland.

Langden. It rises at Langden Fell on the border of Lancashire and flows six miles to meet the Hodder in Yorkshire.

Langley Beck. A ten-mile tributary of the Tees near Gainford in Durham.

Langley Brook. It joins the Tame near Middleton in Warwickshire.

Langworth. A 12-mile affluent of the Witham in Lincolnshire.

Lark. A 26-mile river flowing from near Whepstead in Suffolk, through Bury St. Edmunds and Mildenhall, to meet the Ouse about three miles from Ely in Cambridgeshire.

Latchmore Brook. A Hampshire stream flowing into the Avon near Harbridge.

Lathkil. A Derbyshire river rising near Monyash and joining the Wye near Rowsley.

Laughton Brook. A Worcestershire affluent of the Teme at Powick Bridge, about 12 miles long.

Lavant. A nine-mile Sussex stream flowing from West Dean to Chichester Harbour.

Laver. It runs eight miles to meet Skell Beck near Ripon in Yorkshire.

Laxey. A four-mile river in the Isle of Man flowing from Snae Fell to the sea at Laxey.

Laycock Beck. An affluent of the Aire near Keighley in Yorkshire.

Layer Brook. A small Essex stream flowing from Tiptree to join the Roman near Abberton.

Lea. Or Lee. A 46-mile river rising near Houghton Regis in Bedfordshire and flowing through Hertfordshire and along the boundary of Essex and Middlesex to join the Thames near Blackwell. It passes through the towns of Luton, Hertford, and Ware.

Leach. Or Lech. A river rising near Northleach in Gloucestershire and running 15 miles to meet the Thames in Oxfordshire near Kelmscott.

Lendon. A 22-mile river rising in Herefordshire near Evesbatch and flowing into Gloucestershire and along the Worcestershire boundary to re-enter Gloucestershire to join the Severn.

Leam. A 25-mile river flowing from near Catesby in Northamptonshire to meet the Avon near Leamington in Warwickshire.

Leavens. A five-mile river in the Isle of Man flowing into the sea near Ballamakelly.

Lech. See Leach.

Leck Beck. It rises in Westmorland and joins the Lune near Nether Burrow in Lancashire.

Ledden. A six-mile river rising in Wiltshire and meeting the Stour at Gillingham in Dorset.

Leddon. See Lodon.

Ledwyche. A ten-mile stream flowing from Brown Clee Hill in Shropshire to join the Teme at Burford after passing along the Herefordshire boundary.

Lee. A Kentish river running ten miles to meet the Thames at Greenwich.

Leeming Beck. An 18-mile affluent of the Swale below Morton in Yorkshire.

Leen. It runs 12 miles from near Newstead Abbey in Nottinghamshire to meet the Trent at Nottingham.

Leigh Brook. A small stream rising in Herefordshire and joining the Teme at Leigh in Worcestershire.

Leighton Beck. It flows along the boundary of Lancashire and Westmorland into the estuary of the Kent near Hazelslack in Westmorland.

Leith. A Westmorland river rising near Shap and flowing 12 miles to join the Lyvennet near Crossrigg Hall.

Lemon. An eight-mile tributary of the Teign at Newton Abbot, Devon.

Len. A Kentish river flowing nine miles from near Lenham to meet the Medway at Maidstone.

Lerryn. A six-mile tributary of the Fowey near Lerryn in Cornwall.

Letcombe Brook. A Berkshire stream which rises at Letcombe Bassett and flows through Wantage to meet the Ock near Marcham.

Leven. A Lancashire river flowing 11 miles from Windermere into Morecambe Bay.

Leven. A 22-mile tributary of the Tees in Yorkshire, rising in the Cleveland Hills.

Lew. A seven-mile affluent of the Torridge in Devon.

Lew Water. A Devon river running about ten miles to join the Lyd near Coryton.

Lickle. A Lancashire stream flowing seven miles to meet the Duddon near Broughton-in-Furness.

Lid Brook. A tiny stream joining Box Brook near Colerne in Wiltshire.

Liddel Water. A 25-mile river rising in Scotland and flowing about 12 miles along the boundary between Cumberland and Dumfriesshire before re-entering Scotland to join the Esk.

Lidden. Or Lydden. A ten-mile tributary of the Stour near Hinton St. Mary in Dorset.

Lidmen. A small Sussex river flowing into the Rother near Etchingham.

Linburn Beck. An affluent of the Wear near Witton-le-Wear in Durham.

Line. A Cumberland river which is formed by the confluence of several headstreams, including the Black Line and the White Line, and flows 18 miles to meet the Esk near Arthuret.

Linhope Burn. A small tributary of the Breamish in Northumberland.

Lisles Burn. It joins the Rede near East Woodburn in Northumberland.

Little Beck. A small affluent of the Esk near Sleights in Yorkshire.

Liza. A Cumberland river flowing six miles from near Great Gable, through Ennerdale Forest, into Ennerdale Water.

Loddon. From its source near Worting in Hampshire it flows through Basingstoke into Berkshire to join the Thames near Wargrave after a 30-mile course.

Lodon. Or Leddon. A Herefordshire river rising near Bredenbury and flowing eight miles to join the Frome near Yarkhill.

Loo. See Cober.

Logan Beck. A small Cumberland stream which meets the Duddon near Beckfoot.

Loman. Or Lowmon. An eight-mile tributary of the Exe at Tiverton in Devon.

Longford. A Sussex stream flowing into the Ouse near Isfield.

Long Nanny. A Northumberland river, it rises near Doxford Hall, flowing into the North Sea at Beadnell Bay.

Looe. A Cornish river flowing by Liskeard to the sea at Looe Bay. It separates East Looe from West Looe and its tributary, the West Looe, joins it near its mouth.

Loose. A Kentish river flowing into the Medway at Maidstone.

Lopen Brook. It joins the Parret near Over Stratton in Somerset.

Lostock. A Lancashire river which flows about 12 miles to join the Yarrow.

Loud. A five-mile affluent of the Hodder in Lancashire.

Lowley Brook. A small Cornish stream flowing into the Tamar near Dunterton.

Lownton. See Loman.

Lowther. It rises in Shap Fell and runs 17 miles, through Westmorland, to join the Earnont at Brougham Castle.

Loxley. A Yorkshire river which joins the Don at Sheffield.

Lox Yeo. A small affluent of the Axe near Loxton in Somerset.

Lud. A Lincolnshire river flowing about 12 miles from the Wolds, through Louth, where the Louth Navigation Canal joins it, into the North Sea near Grainthorpe Haven.

Lugg. It rises in Radnorshire and flows into Herefordshire, through Leominster, to meet the Wye near Mordiford after a course of about 40 miles.

Lune. A 45-mile river rising near Ravenstonedale in Westmorland and flowing through Tebay and Kirkby Lonsdale into Lancashire, where it reaches the Irish Sea after passing through Lancaster.

Lune. A tributary of the Tees near Lonton in Yorkshire, 12 miles long.

Lune Head Beck. A headstream of the Yorkshire Lune, rising in Westmorland.

Lupton Beck. An affluent of the Beela near Milton in Westmorland.

Lyd. A Devon river flowing 10 miles to meet the Tamar near Lifton.

Lyde. A Hampshire river flowing five miles to join the Loddon near Sheffield.

Lyme. A three-mile stream rising in Devon and flowing into Lyme Bay at Lyme Regis in Dorset.

Lyme. A Staffordshire tributary of the Trent.

Lymington. A Hampshire river running 12 miles from the New Forest to the Solent at Lymington.

Lynn. A 20-mile river rising in the Wolds and flowing through Lincolnshire into the Wash at Wainfleet Harbour. The lower part of its course is called the Steeping.

Lyn, East and West. Two rivers rising in Exmoor Forest in Somerset and uniting to flow into the Bristol Channel at Lynmouth, Devon.

Lyne. A 10-mile stream flowing through Northumberland from near Fenrother to the sea at Linmouth.

Lynher. A Cornish river rising on Bodmin Moor and flowing 26 miles to join the estuary of the Tamar.

Lyvennet. It flows 11 miles through Westmorland from Crosby Ravensworth Fell to meet the Eden near Temple Sowerby.

M

Madford. A small Devonshire river joining the Culm near Hemyock.

Maize Beck. A stream rising on Murton Fell and flowing along the Yorkshire and Westmorland border to meet the Tees.

Mangerton. A Dorset river which meets the Asker at Bradpole.

Manhope Burn. A tributary of the West Allen, near Farneyside, Northumberland.

Manifold. Or Manyfold. A Staffordshire river rising near Flash and running 16 miles to the Dove near Ilam.

Maran. Or Mimram. A Hertfordshire river flowing about 12 miles to meet the Lea at Hertford.

March Burn. A small affluent of the Blyth in Northumberland.

Marden. A small tributary of the Avon near Tytherton Lucas, Wiltshire.

Mardle. A six-mile stream flowing through Devon from near Ryders Hill on Dartmoor to meet the Dart at Buckfastleigh.

Marron. It rises on Blake Fell and flows nine miles through Cumberland to join the Derwent near Great Clifton.

Marske Beck. An affluent of the Swale near Marske in Yorkshire.

Marston Brook. A small affluent of the Dove at Sudbury, Derbyshire.

Maun. A headstream of the Idle in Nottinghamshire, about 20 miles long.

Measand Beck. A short stream, with several cascades, flowing into Haweswater in Westmorland.

Mease. A 14-mile river flowing from near Ashby-de-la-Zouch in Leicestershire, along the boundaries of Derbyshire, Staffordshire, and Leicestershire, to meet the Tame near Croxall.

Meavy. Or Mew. A Devon river rising on Dartmoor and flowing 13 miles to join the Plym near Bickleigh.

Meden. A headstream of the Idle in Nottinghamshire, 18 miles long.

Medina. A 12-mile river in the Isle of Wight flowing from near St. Catherine's Hill, through Newport, to the Solent at Cowes.

Medlock. A Lancashire river flowing 11 miles to join the Irwell at Manchester.

Medway. It rises near East Grinstead in Sussex and flows 70 miles through Kent, past Tonbridge, Maidstone, Aylesford, Rochester, and Chatham, to enter the Thames estuary at Sheerness.

Meece. Or Meese Brook. A Staffordshire stream running nine miles to meet the Sow near Chebsey.

Mees. See Meess.

Mees Brook. See Meece.

Meess. Or Meese. A 17-mile river flowing from Aqualate Mere in Staffordshire to join the Tern near Great Bolas in Shropshire.

Menethorpe Beck. A feeder stream of the Derwent in Yorkshire.

Meon. A Hampshire river rising near East Meon and flowing 21 miles to the Solent near Lee-on-the-Solent. The lower part of the river is called the Titchfield.

Merrit Brook. An affluent of Griffin's Brook in Worcestershire.

Mersey. A 50-mile river formed by the confluence of the Goyt and the Tame at Stockport in Cheshire. It flows along the boundary between Lancashire and Cheshire, past Warrington and Runcorn, to the Irish Sea at New Brighton.

Mew. See Meavy.

Mickleby Beck. A small Yorkshire stream flowing into the North Sea at Sandsend near Whitby.

Middlehope Burn. A small affluent of the Wear at Westgate in Durham.

Mill Beck. A small stream joining the Humber at Brough in Yorkshire.

Mill Brook. A Berkshire affluent of the Thames at Sutton Courtenay.

Millburn Beck. A Cumberland stream rising in Westmorland, it joins the Eden near Temple Sowerby.

Miller Burn. A small tributary of the Rede in Northumberland.

Mimram. See Maran.

Minsmere. It rises near Ubbeston and flows 10 miles through Suffolk to the North Sea at Minsmere.

Mint. A seven-mile Westmorland stream joining the Kent near Kendal.

Mires Beck. A Yorkshire stream flowing from North Newbald through Hotham to Ellerker Sands.

Misbourne. A Buckinghamshire river flowing 14 miles from near Great Missenden, through Amersham, to meet the Colne near Denham.

Mite. An eight-mile river in Cumberland rising on Eskdale Moor and joining the estuary of the Esk and the Irt at Ravenglass.

Mole. A Devon river running 10 miles from Exmoor to join the Bray near Satterleigh.

Mole. A 30-mile river rising in St. Leonard's Forest in Sussex and flowing through Surrey to meet the Thames at East Molesey.

Molesdon Burn. A small affluent of the Wansbeck near Molesdon in Northumberland.

Monks Brook. A Hampshire stream flowing six miles to join the Itchen near Southampton.

Monks Lode. An artificial feeder stream of the Nene in Huntingdonshire.

Monnow. It rises on Hay Bluff and flows about 28 miles through Herefordshire and along the Monmouthshire and Herefordshire boundary to join the Wye at Monmouth.

Moors. It rises in Dorset and flows about 10 miles to join the Stour near Holdenhurst in Dorset.

Mor Brook. A small tributary of the Severn in Shropshire.

Morda. A Shropshire river rising near Selattyn and flowing about 15 miles to meet the Vyrnwy.

Moresdale Beck. A small affluent of Marske Beck in Yorkshire.

Moreton's Lcam. An artificial stream of the Nene in Cambridgeshire.

Moss. The. A Derbyshire stream flowing from Norton to join the Rother at Eckington.

Moulton. A canalised stream of the Whapload in Lincolnshire.

Mountain Brook. A Monmouthshire stream joining the Severn near Chepstow.

Muscat. See Cat's Water.

N

Nadder. A Wiltshire river rising on the Dorset border near Shaftesbury and flowing 18 miles to meet the East Avon at Wilton.

Naddle Beck. A three-mile affluent of the Greta in Cumberland, rising on Castlerigg Fell.

Nar. Or Setcely. A Norfolk river rising near Mileham and running 21 miles to unite with the Ouse at King's Lynn to flow into the Wash.

Neb. An eight-mile river in the Isle of Man flowing into the Irish Sea at Peel, with a fine waterfall, Rhenas Fall, about two miles below its source.

Nene. A 90-mile river formed by the confluence of two Northamptonshire headstreams, which rise near Naseby and Daventry and unite at Northampton. It runs, past Wellingborough, Thrapston, and Oundle, along the Huntingdonshire border to Peterborough, and through Cambridgeshire and Norfolk, into Lincolnshire to flow into the Wash near Long Sutton.

Nene, Old. A branch of the Nene, flowing through Huntingdonshire and Cambridgeshire, past March, to join the Old Croft at Saiter's Lodge Sluice.

Nent. A Cumberland stream flowing five miles to join the South Tyne at Alston.

New. An artificial river made 1609-13 by Sir Hugh Myddelton. It runs 36 miles from near Ware in Hertfordshire, through Middlesex, into reservoirs at Hornsey and Stoke Newington for supplying water to North London.

New. It flows from near the Suffolk and Cambridgeshire border to join the Cam at Upware in Cambridgeshire.

New. A canalised river in Lincolnshire which joins the Welland near Spalding.

New Idle River. A canalised river flowing into the Trent at Keadby, Lincolnshire.

Newlands Beck. A tributary of the Derwent in Cumberland.

Newtown. A small river in the Isle of Wight flowing into the Solent at Newtown.

Nidd. A Yorkshire river flowing about 35 miles from Great Whernside, through Pateley Bridge, Ripley, and Knaresborough, to join the Ouse at Nun-Monkton.

Nine Mile. A Wiltshire stream which flows into the East Avon near Bulford.

Noe. A nine-mile river rising near Kinder Scout in Derbyshire and flowing, through the Vale of Edale, to meet the Derwent near Bamford.

North. A Sussex river joining the Arun near Slinfold.

North Beck. A headstream of the Slea which joins Cliff Beck near Screddington, Lincolnshire.

North Beck. A Nottinghamshire stream flowing from near East Retford to join the Trent near Lancham.

North Brook. A small affluent of the Wash at Empingham, Rutland.

Northdale Beck. A small affluent of the Severn at Rosedale Abbey in Yorkshire.

Northfield Brook. An Oxfordshire tributary of the Thames near Sandford.

Norton Ditch. An Oxfordshire stream joining Shill Brook near Bampton to flow into the Thames.

Nunney Brook. It flows through Nunney to meet the Frome near Frome in Somerset.

O

Oak Beck. A small tributary of the Nidd near Ripley in Yorkshire.

Oakhanger Stream. A Hampshire stream flowing into the Slea near Kingsley.

Oare Water. A Somerset headstream of the East Lyn.

Ock. A Berkshire river rising near Coxwell and flowing 18 miles through the Vale of the White Horse to meet the Thames at Abingdon.

Ockley Brook. It flows along the Northamptonshire and Oxfordshire boundary to meet the Oxford Canal near Clifton in Oxfordshire.

Og. A small Wiltshire river which joins the Kennet near Marlborough.

Ogle Burn. An affluent of the Blyth in Northumberland.

Okement. Two headstreams, the East and West Okement, both rise on Okement Hill on Dartmoor and unite at Okehampton to form the Okement, which flows 13 miles through Devon to meet the Torridge near Meeth.

Olchon Brook. A seven-mile stream flowing through Herefordshire from the Black Mountains to join the Monnow near Clodock.

Old Bourne, The. A Hertfordshire stream which flows into the Beane in Woodhall Park.

Old Croft. Or Welney. A canalised stream flowing through Norfolk and Cambridgeshire to join the Old Nene at Upwell in Norfolk.

Old West. See Ouse, Great.

Olwy. A Monmouthshire river rising near Treleick and running 15 miles to meet the Usk near Llanfellowell.

Onny. A 16-mile river in Shropshire flowing from Stiperstones to join the Teme in Oakley Park.

Ore. See Alde.

Orwell. See Gipping.

Otter. It rises in the Black Down Hills on the Somerset border and flows 24 miles through Devon, past Honiton and Ottery St. Mary, to the English Channel near Budleigh Salterton.

Otterburn Beck. A feeder stream of the Aire in Yorkshire.

Ottercops Burn. A small affluent of the Wansbeck near Hartington, Northumberland.

Ottery. Or Attery. A 12-mile tributary of the Tamar rising near Otterham, Cornwall, part of its course forming the boundary between Cornwall and Devon.

Oughtershaw Beck. A headstream joining the Wharfe near Beckermunds, Yorkshire.

Oughton. A tributary of the Hiz near Ickleford in Hertfordshire.

Ouse. It rises in St Leonard's Forest near Slaugham and flows 30 miles through Sussex, past Lewes, into the English Channel at Newhaven Harbour.

Ouse. A Yorkshire river which is formed by the confluence of the Ure and the Swale near Myton and flows 45 miles through Newton, York, Cawood, Selby, and Goole to Faxfleet, where it joins the Trent to flow into the Humber.

Ouse Burn. A Northumberland tributary of the Tyne at Newcastle.

Ouse, Great. A 156-mile river rising in several headstreams near Brackley in Northamptonshire and flowing along the border of Oxfordshire, through Buckinghamshire, Bedfordshire, Huntingdonshire, and Cambridgeshire, to enter the Wash near King's Lynn in Norfolk. It passes through Buckingham, Stony Stratford, Newport Pagnell, Olney, Bedford, St Neot's, Godmanchester, Huntingdon, St Ives, Ely, and Market Downham. In Cambridgeshire it is sometimes called the Old West River.

Ouse, Little. Or Brandon. A 30-mile tributary of the Great Ouse at Brandon Creek Bridge on the Norfolk and Cambridgeshire border. It flows, past Thetford and Brandon, along the borders of Norfolk, Suffolk, and Cambridgeshire. One of its headstreams rises in Norfolk, the other in Suffolk.

Ouzel. A 25-mile river flowing from near Ivinghoe in Buckinghamshire, along the Bedfordshire and Buckinghamshire border, to meet the Great Ouse at Newport Pagnell in Buckinghamshire. On it are Leighton Buzzard, Linslade, and Fenny Stratford.

Oxford Canal. It runs from the Coventry Canal near Hawkesbury in Warwickshire, through parts of Warwickshire and Northamptonshire into Oxfordshire, where it joins the Thames at Oxford. It passes Rugby and Banbury on its 91-mile course, which in Oxfordshire is nearly parallel with the Cherwell. It helps to connect the Thames with the Mersey and the Severn.

P

Pang. A Berkshire river running 13 miles from near Hampstead Norris to join the Thames at Pangbourne.

Pant. See Blackwater.

Park Beck. A small affluent of the Kent in Westmorland.

Parret. It rises in Dorset near South Perrott and flows 35 miles through Somerset, past Langport and Bridgewater, into Bridgwater Bay at Stert Point.

Parsley Beck. A small Yorkshire stream flowing into Little Beck.

Pendle Water. A Lancashire stream rising near Pendle Hill, it flows 10 miles to join the Calder near Burnley.

Penk. A Staffordshire river flowing 21 miles from near Tettenhall to meet the Sow near Baswick.

Pennycombe Water. A Somerset stream meeting the Barle at Withypool.

Penpont Water. A Cornish stream flowing into the Inny near Lewannick.

Peover. A 17-mile river rising near Gawsorth and running through Cheshire to join the Weaver near Northwich.

Perry. A tributary of the Severn at Myton in Shropshire. It is about 15 miles long.

Petteril. A Cumberland river rising in two headstreams near Penruddock and flowing 22 miles to join the Eden near Carlisle.

Pickering Beck. A Yorkshire stream flowing 14 miles to join the Costa Beck near Kytton.

Pickford Brook. A Warwickshire tributary of the Sherbourne near Allesley.

Piddle. See Trent.

Piddle. Or Piddle Brook. A 12-mile tributary of the Avon near Wyre Piddle in Worcestershire.

Pill. A Somerset river flowing from near Rodhuish to the Bristol Channel at Blue Anchor Bay.

Pillbrook. A small tributary of the Usk at Usk, Monmouthshire.

Pilling. A Lancashire stream flowing six miles to the sea at Pilling.

Pincey Brook. A tributary of the Stort at Harlow, Essex.

Pipp Brook. A small Surrey stream which flows past Dorking to the Mole.

Plym. It rises at Plym Head on Dartmoor and runs 16 miles through Devon into Plymouth Sound at Plymouth.

Pocklington Canal. A Yorkshire canal which runs about 11 miles from Pocklington to join the Derwent near East Collingworth.

Pods Brook. An Essex stream joining the Brain at Braintree.

Pont. A 16-mile tributary of the Blyth in Northumberland, rising near Great Whittington.

Pont Gallan Burn. An affluent of Tiptall Burn near Thirlwall Castle in Northumberland.

Pool River. It rises near Beckenham, Kent, and flows into the Thames at Greenwich Reach.

Porter. A small Yorkshire stream meeting the Don in Sheffield.

Pott Beck. A feeder stream of the Ure in Yorkshire.

Potts Beck. A small affluent of Helm Beck in Westmorland.

Poulter. A Nottinghamshire stream flowing 15 miles to join the Idle near West Drayton.

Pow Beck. A small tributary of the Waver in Cumberland.

Powmaughan. Or Powmaughan Beck. A six-mile stream joining the Eden near Aglionby in Cumberland.

Press Brook. A Derbyshire stream which joins the Amber at Brackenfield.

Prestwick Burn. It runs into the North Tyne near Heugh in Northumberland.

Pulham. An affluent of the Haddeo in Somerset.

Purwell. A small Hertfordshire tributary of the Hiz near Walsworth.

Pye Brook. A tributary of the Corve in Shropshire.

Q

Quarme. A Somerset river which joins the Avill near Cutcombe.

Queniborough Brook. An affluent of the Wreak at Queniborough, Leicestershire.

Queeny. An eight-mile stream rising on Longmynd and flowing through Shropshire to the Onny at Halford.

Quin. An affluent of the Rib at Braughing in Hertfordshire, eight miles long.

Quy Water. A small feeder stream of the Cam in Cambridgeshire.

R

Rae Burn. A small affluent of the Line in Cumberland.

Rains Brook. A small stream rising near Kilsby in Northamptonshire and flowing along the boundary into Warwickshire, where it joins the Leam near Grandborough.

Rainsbrook. An affluent of the Leam near Dunchurch, Warwickshire.

Rainworth Water. It rises near East Kirby and flows 11 miles to join the Maun at Ollerton, Nottinghamshire.

Raisdale Beck. A tributary of the Seph in Yorkshire.

Rampsgill Beck. One of the headwaters of Sandwick Beck, which flows into Lake Ullswater in Westmorland.

Ramsdale Beck. A Yorkshire stream running into the North Sea at Robin Hood's Bay.

Ramsgill Beck. It flows about four miles to join the Nidd at Ramsgill in Yorkshire.

Rase. A Lincolnshire river flowing seven miles from the Wolds, through Market Rasen, to join the Ancholme.

Raven Beck. A Cumberland stream which joins the Eden at Kirkoswald.

Ravensbourne. A Kentish river rising near Farnborough, and flowing 10 miles, through Lewisham, to meet the Thames at Deptford.

Rawthey. A 15-mile river rising on Bow Fell in Yorkshire and flowing along the border of Westmorland and Yorkshire to meet the Lune near Sedburgh.

Ray. It rises in Buckinghamshire and runs 13 miles to join the Cherwell near Islip in Oxfordshire.

Ray. It flows eight miles from near Elcombe in Wiltshire, through Swindon, to meet the Thames near Cricklade.

Raydale Beck. One of the headwaters of the Bain in Yorkshire.

Rea. A tributary meeting the Severn at Shrewsbury in Shropshire.

Rea. Or Rea Brook. A 20-mile stream flowing from near Long Stanton in Shropshire, through Cleobury Mortimer, to join the Teme near Rochford in Worcestershire.

Rea. Rising near the Glent Hills in Worcestershire and passing Birmingham, its 11-mile course leads to the Tame.

Rea Brook. See Rea.

Red. A seven-mile Cornish river flowing into St. Ives Bay.

Rede. A Northumberland river rising in the Cheviot Hills and running 21 miles to join the North Tyne at Reedsmouth.

Rhee. A Hertfordshire headstream of the Cam (q.v.).

Rib. A Hertfordshire stream running 12 miles from near Buckland, through Buntingford, to join the Lea at Hertford.

Ribble. It rises in Yorkshire near Ribbleshead and flows into Lancashire, where it enters the Irish Sea between Lytham and Southport, after a course of about 60 miles. It passes through the towns of Settle and Preston.

Ribourne. See Ryburn.

Rical. A Yorkshire river rising on Helmsley Moor and flowing 14 miles to meet the Rye near Salton.

Rigend Burn. A small affluent of Kielder Burn in Northumberland.

Rivelin. A small Yorkshire stream flowing into the Loxley which joins the Don at Sheffield.

Roach. Or Roche. An 11-mile river running through Essex from near Rayleigh, through Rochford, to join the estuary of the Crouch.

Roch. A 12-mile river rising on the Yorkshire border near Todmorden and flowing into Lancashire, through Rochdale, to meet the Irwell near Radcliffe.

Roche. See Roach.

Roddlesworth. An affluent of the Darwen in Lancashire.

Roden. It rises near Ellesmere and runs 18 miles through Shropshire, past Wem, to join the Tern near Rodington.

Roding. An Essex river flowing 30 miles from near Tilty, through Chipping Ongar, Wanstead, Ilford, and Barking, to meet the Thames near the Royal Albert Dock.

Roe Beck. A seven-mile stream flowing through Cumberland from near Lamony to the Caldew near Gaitsgill.

Roeburn. Or Roeburndale. A Lancashire river running six miles, through Roeburndale, to the Hindburn at Wray.

Roeburndale. See Roeburn.

Rom. An Essex river rising near Havering-Atte-Bower and flowing about 11 miles, through Romford, to meet the Thames near Rainham.

Roman. An 11-mile river flowing through Essex from near Great Tey to join the Colne at Wivenhoe.

Rookhope Burn. A tributary of the Wear near Eastgate in Durham.

Rothay. A Westmorland river flowing eight miles from Dunmail Raise, through Grasmere and Rydal Water, to join the Brathay near Clappersgate.

Rother. A 21-mile river rising near Nether Pilsley in Derbyshire and flowing past Chesterfield into Yorkshire, where it meets the Don at Rotherham.

Rother. It rises near Priors Dean in Hampshire and flows into Sussex, past Midhurst, to join the Arun near Stopham after a 24-mile course.

Rother. A Sussex river, about 31 miles long, rising near Rotherfield and running along the Kentish boundary to enter the English Channel at Rye Harbour.

Rothley Brook. A small affluent of the Soar at Rothley, Leicestershire.

Rousby Beck. A rivulet flowing into the North Sea at Staithes in Yorkshire.

Rowley Burn. A tributary of Devils Water near Juniper in Northumberland.

Roxby Beck. A small Yorkshire stream flowing from Roxby Moor to the North Sea at Staithes.

Rudhall Brook. A Herefordshire stream flowing seven miles to join the Wye at Ross.

Rushford Beck. A Durham stream flowing into the Skerne near Aycliffe.

Rutmoor Beck. A feeder stream of the Esk in Yorkshire.

Ryburn. Or Ribourne. A Yorkshire stream flowing through the Rishworth Moors to join the Calder near Sowerby Bridge.

Rye. A 35-mile river rising in the Cleveland Hills and running through Yorkshire, past Helmsley, to meet the Derwent near Wykeham.

Ryton. A Nottinghamshire river rising on the west boundary of the county near Shireoaks and flowing 20 miles, through Worksop, to join the Idle at Bawtry.

S

Sabden Brook. A tributary of the Calder near Moreton Hall in Lancashire.

St. Botolph's Brook. A small Essex stream flowing into the Colne near West Bergholt.

St. Neot. A Cornish river rising on Bodmin Moor and flowing eight miles to join the Fowey near St. Neot.

Salcombe. A Devon river flowing into the English Channel between Bolt Head and Prawle Point.

Salwarpe. A Worcestershire river rising on the Lickey Hills and flowing 14 miles, through Droitwich, to join the Severn near Grimley.

Sandford Brook. It joins the Ock near Abingdon in Berkshire.

Sankey Brook. A 14-mile stream flowing through Lancashire from near Bickerstaffe to meet the Mersey near Warrington.

Sargill Beck. A small stream flowing into Grange Beck in Yorkshire.

Sark. An 11-mile river rising in Dumfriesshire and flowing along the Cumberland border to the estuary of the Esk near Gretna Green.

Sars Brook. An Oxfordshire stream which joins the Evenlode near Bruern Abbey.

Savick Brook. Or Savock Brook. A 10-mile tributary of the Ribble near Preston in Lancashire.

Scale Beck. A feeder stream of the Eden in Westmorland.

Scales Beck. A small Westmorland stream flowing into Ullswater.

Scandale Beck. A four-mile affluent of the Rothay in Westmorland, with several small waterfalls.

Scarrow Beck. A small affluent of the Bure which rises near East Beckham, Norfolk.

Scorby Beck. A canalised stream of the Witham in Lincolnshire.

Scugdale Beck. A stream meeting the Leven near Sexhow in Yorkshire.

Seaton. A Cornish river running nine miles from near St. Cleer to the English Channel at Seaton Bridge.

Seaton Burn. A stream flowing into the North Sea at Seaton Sluice in Northumberland.

Sem. A Wiltshire stream meeting the Nadder near Wardour Castle.

Semington Brook. A small tributary of the Avon near Semington, Wiltshire.

Sence. A Leicestershire river rising on Bardon Hill and flowing 15 miles to join the Anker on the Warwickshire boundary near Ratcliffe Culey.

Seph. A Yorkshire stream flowing nine miles, through Bilsdale, to meet the Rye near Hawbnby.

Setchey. See Nar.

Seven. Or Severn. A 17-mile river in Yorkshire flowing through Rosedale to join the Rye near Little Habton.

Severn. A 180-mile river rising at Blaeu-y-Hafren on Plinlimmon in Montgomeryshire and flowing, through Shropshire, Worcestershire, and Gloucestershire, into the Bristol Channel. It passes through Llandiloes, Newtown, Welshpool, Shrewsbury, Ironbridge, Bridgnorth, Bewdley, Stourport, Worcester, Upton-on-Severn, Tewkesbury, Gloucester, and Newnham on its way to the sea.

Severn (Yorks).—See Seven.

Shank Burn. An affluent of the Breamish in Northumberland.

Shartley Burn. A feeder stream of the Coquet in Northumberland.

Shaw Beck. A stream joining the Ark at Eskelith in Yorkshire.

Sheaf. An eight-mile river flowing along the Yorkshire and Derbyshire boundary to join the Don in Sheffield.

Sheppey. A tributary of the Axe, rising near Shepton Mallet in Somerset.

Sherborne Brook. It joins the Upper Avon near Sherbourne in Warwickshire.

Sherbourne. Or Shirburn. A Warwickshire river running nine miles, through Coventry, to meet the Sowe near Baginton.

Sherdon Water. An affluent of the Barle in Somerset.

Shill Brook. It joins Norton Ditch and Highmoor Brook near Bampton in Oxfordshire to flow into the Thames.

Shipley Burn. A tributary of the Aln in Northumberland.

Shirburn. See Sherbourne.

Sid. A six-mile river flowing through Devon to enter the sea at Sidmouth.

Silver Burn. A seven-mile stream in the Isle of Man flowing from South Barrule Mountain to Castletown.

Simene. A tributary of the Brit near Bridport in Dorset.

Sirhowy. An 18-mile river joining the Ebwy near Risca in Monmouthshire. Its source is in Wales.

Sixteen Foot. A canalised river joining the Old Croft at Susan's Green, Cambridgeshire.

Skeby Beck. A small affluent of the Swale near Brompton-on-Swale in Yorkshire.

Skell Beck. A 10-mile stream flowing through Yorkshire from Dallowgill Moor to meet the Ure near Ripon.

Skelton Beck. A Yorkshire stream running into the North Sea at Saltburn.

Skerne. It rises near Trimdon and flows 19 miles through Durham, past Darlington, to join the Tees at Croft.

Skippool. A small Lancashire stream meeting the estuary of the Wyre at Skippool.

Skirfare. A 10-mile tributary of the Wharfe near Kilnsey in Yorkshire.

Skitter Beck. A Lincolnshire stream flowing nine miles to join the estuary of the Humber at Skitter Haven.

Slade, The. A small affluent of the Ise at Kettering, Northamptonshire.

Slea. It rises near Ancaster and runs 18 miles through Lincolnshire to meet the Witham near Dogsdyke.

Slea. A small Hampshire affluent of the Wey near Headley.

Sleddale Beck. A tributary of the Esk near Castleton in Yorkshire.

Sleek Burn. A tributary of the Blyth rising near Clifton, Northumberland.

Smalehope Burn. A small affluent of Tarsit Burn in Northumberland.

Smales Burn. A tributary of the North Tyne in Northumberland.

Small Burn. It flows from Black Fell in Northumberland to meet the Irthing on the Cumberland border.

Smeston. A 10-mile stream in Staffordshire joining the Stour near Stourton.

Smite. It rises on Broughton Hill in Leicestershire and flows into Nottinghamshire to meet the Devon near Shelton after a 16-mile course.

Smite Brook. A nine-mile affluent of the Sowe near Walsgrave-on-Sowe in Warwickshire.

Snail. It flows through Cambridge to join the Soham Lode.

Snaizeholme Beck. A Yorkshire stream uniting with Widdale Beck to flow into the Ure.

Snope Burn. A small tributary of the South Tyne in Northumberland.

Soar. A 40-mile river rising on the Warwickshire boundary and flowing through Leicestershire, past Leicester and Mount Sorrel, and along the Nottinghamshire and Leicestershire boundary, to join the Trent at the meeting point of Derbyshire, Leicestershire, and Nottinghamshire.

Soham Lode. A tributary of the Cam near Little Thetford, Cambridgeshire.

Soot Burn. A short affluent of Houxty Burn in Northumberland.

Sor Brook. A stream flowing into the Usk at Caerleon, Monmouthshire.

Sor Brook. An Oxfordshire river flowing into the Cherwell at its junction with the Swere.

Soulgill Beck. A small stream joining the Lune near Soulgill House in Yorkshire.

South Brook. A small Bedfordshire affluent of the Great Ouse.

Southope Burn. A tributary of the Coquet in Northumberland.

Sow. An 18-mile river flowing through Staffordshire from near Broughton, past Stafford, to meet the Trent near Great Haywood.

Sow. See Sowe.

Sowden Beck. An affluent of the Ure near Jervaulx Abbey in Yorkshire.

Sowe. Or Sow. A Warwickshire river rising near Astley and running 15 miles to join the Avon near Stoneleigh.

Spodden Brook. A Lancashire stream flowing six miles to join the Roch at Rochdale.

Spratford. A Devon stream flowing seven miles to join the Culm at Culmpton.

Sprint. A 10-mile river in Westmorland rising on Harter Fell and flowing through Long Sleddale to meet the Kent near Burneside.

Spruce Gill Beck. A feeder stream of the Ure in Yorkshire.

Spurlwood Beck. A tributary of Bedburn Beck in Durham.

Stebbing Brook. A small tributary of the Chelmer near Felstead, Essex.

Steeping. See Lynn.

Sters Pool. A Lancashire stream flowing 10 miles from Torver Fells to the estuary of the Duddon.

Stiffkey. It rises near Swanton-Novers and runs 18 miles through Norfolk into the sea near Morston.

Stilling Fleet Beck. A Yorkshire stream. It rises near Dunnington and flows into the Ouse near Stillingfleet.

Stock Beck. A feeder stream of the Ribble near Gisburn, Yorkshire.

Stock Beck. A feeder stream of the Aire in Yorkshire.

Stock Gill. A five-mile stream flowing into the Rothay near Ambleside in Westmorland, with a waterfall of 70 feet called Stock Gill Force.

Stockland Beck. A short affluent of the Derwent in Yorkshire.

Stockley Beck. A Durham rivulet flowing through Brancepeth to meet the Wear.

Stoke. See Wissey.

Stonegate Beck. A tributary of the Esk in Yorkshire.

Stort. A 22-mile river rising near Langley in Essex and running along the boundary between Essex and Hertfordshire, past Bishops Stortford, to join the Lea near Hoddesdon.

Stoup Beck. A small stream flowing into the sea at Robin Hood's Bay in Yorkshire.

Stour. A 55-mile river rising at Stourhead near Stourton in Wiltshire and flowing through Dorset, past Gillingham, Sturminster-Newton, Blandford, and Wimborne Minster into Hampshire, where it enters the sea at Christchurch.

Stour. It rises in Cambridgeshire, near West Wickham, and runs through Suffolk and along the Essex and Suffolk boundary, past Clare, Long Melford, Sudbury, and Nayland, to the North Sea at Harwich after a 47-mile course.

Stour. A 20-mile river rising near Halesowen in Worcestershire and running through Staffordshire to re-enter Worcestershire, where it flows through Kidderminster to join the Severn at Stourport.

Stour. It flows 20 miles from near Wigington in Oxfordshire, through parts of Warwickshire and Worcestershire, past Shipston, and along the Gloucestershire border, to meet the Avon near Clifford Chambers.

Stour. A Kentish river rising near Lenham and running 40 miles, through Ashford, Wye, Canterbury, and Sandwich, to Pegwell Bay. Between its source and the junction with the Little or Lesser Stour near Stourmouth, it is usually called the Great Stour.

Stour, East. This eight-mile Kentish river joins the Great Stour at Ashford.

Stour, Great. See Stour (Kent).

Stour, Lesser. See Stour, Little.

Stour, Little. Or Lesser Stour. A 17-mile river flowing through Kent from near Lymington to join the Stour near Stourmouth.

Strat. A seven-mile Cornish river rising near Kilkhampton and flowing into Bude Bay.

Stratford-on-Avon Canal. A Warwickshire canal running from Birmingham to the Upper Avon at Stratford.

Strine. A tributary of the Tern at Crugington in Shropshire.

Sturcombe. A Devon river, about six miles long, meeting the Little Dart near Witheridge.

Stutfield Brook. An affluent of the Ock at Stanford-in-the-Vale, Berkshire.

Sunnysill Beck. A Cumberland stream rising on Skirwith Fell and joining the Eden near Great Salkeld.

Sutherland Beck. An affluent of the Seven near Cropton in Yorkshire.

Sutton Brook. A small Derbyshire stream which meets Hilton Brook near Hilton.

Swale. A 60-mile river rising on the border of Westmorland and running through Yorkshire, past Richmond to unite with the Ure near Myton-upon-Swale to form the Ouse.

Swarbourn. A Staffordshire river flowing eight miles from Needwood Forest to meet the Trent near Alrewas.

Swere. An 11-mile tributary of the Cherwell in Oxfordshire, rising near Hook Norton.

Swift. It rises in Leicestershire near Bruntingthorpe and flows 12 miles into Warwickshire to the Avon near Rugby.

Swigate. An eight-mile river in Gloucestershire running from near Cheltenham to meet the Severn near Tewkesbury.

Swill Brook. A Wiltshire tributary which joins the Thames near Ashton Keynes.

Swindale Beck. A Westmorland stream flowing through Brough to join the Eden near Great Musgrave.

Swinhoe Burn. A small rivulet in Northumberland falling into the North Sea near North Sunderland Point.

Swinhope Burn. An affluent of the Wear at Westgate in Durham.

Sydling Water. A Dorset stream rising at Up Sydling and meeting the Frome at Grimstone.

Synderford. A Dorset tributary of the Axe on the Somerset boundary near Winham.

T

Tale. A small Devon river flowing into the Otter at Ottery St. Mary.

Tamar. A 60-mile river rising near Moorwinstow in Cornwall and flowing along the boundary between Devon and Cornwall, through its estuary, the Hamoaze, into Plymouth Sound.

Tame. It flows 25 miles from near Walsall in Staffordshire, through Warwickshire, past Birmingham, and re-enters Staffordshire at Tamworth to join the Trent near Alrewas.

Tame. A tributary of the Leven near Stokesley, in Yorkshire, about seven miles long.

Tame. An 18-mile river rising near Saddleworth in Yorkshire and flowing along the Lancashire and Cheshire border, past Stalybridge and Ashton-under-Lyne, to Stockport, uniting with the Goyt to form the Mersey.

Tanners Brook. A tributary of the Mole at Brockham in Surrey.

Tarn Beck. A short stream in Cumberland joining the Irthing near its source.

Tarn Beck. A small affluent of the Duddon near Dunnerdale in Lancashire.

Tarrant. A Dorset stream running eight miles from near Tarrant Gunville to the Stour near Tarrant Crawford.

Tarret Burn. An affluent of Tarsit Burn near Thorneyburn in Northumberland.

Tarset Burn. A tributary of the North Tyne at Tarset in Northumberland.

Tas. A 15-mile river flowing through Norfolk from near Tibenham to join the Yare near Norwich.

Tavy. A Devon river rising at Tavy Head on Dartmoor and running 20 miles, through Tavistock, to meet the Tamar near Tamerton-Foliot.

Taw. A 50-mile river flowing through Devon from Okement Hill on Dartmoor, past Barnstaple, to the sea at Bideford Bay.

Team. A 13-mile stream joining the Tyne near Gateshead in Durham.

Teau. A Staffordshire river flowing 15 miles to meet the Dove near Uttoxeter.

Tees. A 70-mile river rising at Tees Head on Cross Fell in Cumberland and flowing along the boundaries of Cumberland, Westmorland, Durham, and Yorkshire to the North Sea at Tees Bay, between Redcar, Yorkshire, and Hartlepool, Durham. The towns of Middleton-in-Teessdale, Barnard Castle, Yarm, Stockton-on-Tees, and Middlesbrough are on its banks.

Teign. It rises on Dartmoor, in two headstreams, the North and the South Teign, which unite near Chagford, and runs 30 miles through Devon to the sea at Teignmouth.

Teise. A Kentish river flowing 20 miles from near Tunbridge Wells along the south-west boundary of the county to meet the Medway at Yalding.

Tem. A 60-mile river rising on the boundary between Radnorshire and Montgomeryshire and flowing through Herefordshire, Shropshire, and Worcestershire, past Knighton, Ludlow, and Tenbury, to flow into the Severn below Worcester.

Ter. An Essex stream flowing 11 miles to meet the Chelmer near Ulting.

Tern. A 30-mile river rising at Maer in Staffordshire and running along the boundary into Shropshire, where it joins the Severn near Atcham.

Test. A Hampshire river flowing about 30 miles from near Ashe, through Whitchurch and Stockbridge, to Southampton Water at Redbridge. After its junction with the Anton at Fullerton it is called the Test or Anton.

Thame. It rises near Dinton in Buckinghamshire and runs, past Thame, into Oxfordshire, where it meets the Thames near Dorchester, after a 30-mile course.

Thames. A 210-mile river rising near Coates in Gloucestershire and flowing along the boundaries of Wiltshire, Oxfordshire, Berkshire, Buckinghamshire, Surrey, Middlesex, Essex, and Kent to the North Sea, passing Cricklade, Lechlade, Oxford, Abingdon, Wallingford, Reading, Henley, Marlow, Windsor, Staines, Surbiton, Kingston, Richmond, Brentford, London, Greenwich, Woolwich, and Gravesend. Between its source and its confluence with the Thame it is called the Isis.

Thelsford Brook. A small Warwickshire tributary of the Upper Avon near Hampton Lucy.

Thet. A 16-mile tributary of the Brandon at Thetford in Norfolk.

Thistleton Brook. A feeder stream of the Wyre, Lancashire.

Thornton Beck. A small tributary of the Nidd near Ripley, Yorkshire.

Thrushel. An affluent of the Lyd at Lifton in Devon, about 11 miles long.

Thurlaston Brook. A small affluent of the Soar at Croft, Leicestershire.

Thurne. A Norfolk river, it joins the Bure at Thurne.

Tiddy. Or Tidi. A Cornish river running 10 miles to meet the Lynher at St Germans.

Til. See Kym.

Till. A Lincolnshire river rising near Springthorpe and flowing 16 miles to join the Witham at Lincoln.

Till. A 32-mile river in Northumberland flowing from the Cheviot Hills to meet the Tweed near Tylmouth Park. The part between its source and Chatton is called the Breamish.

Tillingbourne. A Surrey river rising near Abinger and joining the Wey at Shalford.

Tillingham. A nine-mile Sussex river flowing into the Rother at Rye.

Tipalt Burn. A Northumberland stream running 10 miles, past Thirwall Castle, to join the South Tyne at Bellister Castle.

Tirle Brook. A five-mile tributary of the Severn near Tewkesbury in Gloucestershire.

Titchfield. See Meon.

Tod Brook. A Cheshire stream flowing into the Goyt at Whaley Bridge.

Tod Burn. A small affluent of the Coquet near Long Framlington in Northumberland.

Tone. A 29-mile river in Somerset rising in the Brendon Hills and flowing, through Taunton, to join the Parret near Othely.

Tonge. A feeder stream of the Irwell in Lancashire.

Torne. A canalised stream of the Trent, flowing through Yorkshire and Lincolnshire.

Torridge. A Devon river running about 40 miles from near Medden, through Torrington and Bideford, to the estuary of the Taw at Appledore.

Tory Brook. A six-mile affluent of the Plym near Plympton Earle in Devon.

Tove. Or Tow. A 19-mile river in Northamptonshire running through Towcester and along the Buckinghamshire boundary to meet the Great Ouse near Cosgrave.

Tow. See Tove.

Trent (Dorset). Or Piddle. A Dorset river flowing 20 miles from Alton Pancras, through Puddletown and Wareham, to Poole Harbour.

Trent. It rises on Biddulph Moor in Staffordshire and flows through Derbyshire, Nottinghamshire, and Lincolnshire and along the boundaries of Leicestershire and Yorkshire to Trent Ness, where it unites with the Ouse to form the Humber. It passes through Stoke-upon-Trent, Stone, Rugeley, Burton-on-Trent, Nottingham, Newark, and Gainsborough on its course of about 170 miles.

Trent Brook. A Dorset affluent of the Yeio near Trent.

Tresillian. A Cornish river flowing nine miles to join the Truro River near Malpas.

Troney. A five-mile Devon river flowing into the Yeio near Yeoford.

Trothy. A 16-mile tributary of the Wye near Monmouth.

Trout Beck. A Westmorland affluent of the Tees.

Trout Burn. A small tributary of King Water in Cumberland.

Trym. A six-mile affluent of the Avon in Gloucestershire, rising near Filton.

Tud. A Norfolk river rising near East Dereham and flowing 12 miles to join the Wensum near Norwich.

Tutta Beck. A short stream meeting the Greta at Greta Bridge in Yorkshire.

Tweed. A 97-mile river rising in Scotland and flowing, along the boundary of Northumberland and Berwickshire, into Northumberland, to enter the North Sea at Tweedmouth.

Twenty Foot. A canalised stream of the Nene in Cambridgeshire.

Tyne. It is formed by the confluence of its two headstreams, the North and the South Tyne, near Warden, and flows 30 miles through Northumberland and along the Durham border, past Corbridge, Newcastle, Gateshead, North Shields, and South Shields, to enter the North Sea at Tynemouth.

Tyne, North. A 32-mile river rising at Tyne Head in the Cheviot Hills and running through Northumberland, past Bellingham, to its confluence with the South Tyne near Warden.

Tyne, South. It rises on Tynehead Fell in Cumberland and flows 30 miles, through Alston, into Northumberland, where it unites with the North Tyne to form the Tyne.

U

Udale Beck. It flows into Arkle Beck at Littledale in Lancashire.

Umborne Brook. A seven-mile Devon stream flowing into the Coly at Colyton.

Ure. A Yorkshire river rising at Ure Head, on the western border of the county, and flowing about 50 miles, past Askridge, Masham, Ripon, and Boroughbridge, to unite with the Swale near Myton to form the Ouse.

Usk. A river rising on Talsarn Mountain on the boundary between Brecknockshire and Carmarthenshire and running about 70 miles through Brecknockshire and Monmouthshire, past Brecknock, Crickhowel, Abergavenny,

and Caerleon, to enter the estuary of the Severn near Newport.

Usway Burn. A tributary of the Coquet in Northumberland.

V

Venners Water. A Somerset stream which joins the Isle near Isle Brewers.

Ver. Or Verlam. An 11-mile river in Hertfordshire flowing from near Flamstead, through St. Albans, to meet the Coln at Colney Street.

Verlam. See Ver.

Vyrnwy. A 35-mile river which flows along the boundary between Shropshire and Wales to join the Severn near Melverley. It rises in the Berwyn Mountains in Wales and on its course is Lake Vyrnwy, the chief reservoir for Liverpool.

W

Walden Beck. A tributary of the Ure near Swinethwaite in Yorkshire.

Waldon. An affluent of the Torridge near Bradford, Devon, rising near Bradworthy.

Walkham. It rises on Dartmoor and flows 10 miles through Devon to meet the Tavy three miles south of Tavistock.

Walla Brook. An affluent of the East Dart in Devon.

Wallington. A Hampshire river, it passes by Farcham to flow into Portsmouth Harbour.

Wallop Brook. A Hampshire stream flowing into the Test near Houghton.

Wampool. A Cumberland river flowing 16 miles from the Caldbeck Fells to Solway Firth at Grune Point.

Wandle. A nine-mile Surrey and London river rising near Croydon and joining the Thames at Wandsworth.

Wansbeck. It runs 23 miles through Northumberland from Sweethope Loughs, through Morpeth, to enter the North Sea at Cambois.

Wantsum. A Kentish river flowing from the Stour near East Stourmouth to the sea at Reculver.

Waren Burn. A six-mile stream in Northumberland falling into Budle Bay near Warden Mill.

Waring. A Lincolnshire river flowing from Oxcombe to join the Bain at Horncastle.

Warks Burn. A tributary of the North Tyne near Wark in Northumberland.

Warleggan. A Cornish river flowing from Hawkstor Downs and joining the Fowey near Warleggan.

Warwick and Birmingham Canal. A Warwickshire canal running from Birmingham to meet the Upper Avon at Warwick.

Warwick and Napton Canal. A Warwickshire canal which flows from the Upper Avon at Warwick through Leamington to join the Oxford Canal near Napton-on-the-Hill.

Wascrow Beck. A Durham tributary of the Wear at Wolsingham, rising in Waskerley Park.

Wasdale Beck. A tributary of Birk Beck at Shap Wells in Westmorland, rising on Yarlside.

Wash. It rises near Knossington in Leicestershire and flows 20 miles through Rutland to join the Welland in Lincolnshire near Stamford.

Wash. A small Devon river flowing into the Dart near Stoke Gabriel.

Washburn. A 12-mile river rising on Craven Moor and running through Yorkshire to meet the Wharfe near Leathley.

Washford. A Somerset river flowing from the Brendon Hills to the Bristol Channel at Watchet.

Waskerley Beck. A Durham stream flowing eight miles from Waskerley Park to meet the Wear at Wolsingham.

Waveney. It flows 50 miles from near North Lopham in Norfolk, along the Suffolk and Norfolk border, past Diss, Harleston, Beccles, and Bungay, to join the Yare at Burgh Castle.

Waver. A 10-mile river in Cumberland flowing from the Caldbeck Fells to enter Morecambe Bay near Holme Cultram.

Wear. It is formed by the confluence of three streams at Wear Head, and runs 65 miles through Durham, past Stanhope, Wolsingham, Bishop Auckland, and Durham, to Sunderland.

Weaver. A 45-mile river in Cheshire rising at Peckforton and flowing through Natwich and Northwich to join the Mersey near Runcorn.

Weaver. A small Devon river, it flows into the Culm near Bradninch.

Webburn. A tributary of the Dart near Buckland-in-the-Moor in Devon, rising on Dartmoor in two headstreams, the East and the West Webburn.

Weir Water. A Somerset feeder stream of the East Lyn.

Welland. A 70-mile river rising near Sibbertoft in Northamptonshire and running along the boundaries of Leicestershire and Rutland into Lincolnshire, where it flows into the Wash near Fossdyke. Market Harborough, Rockingham, Stamford, Market Deeping, and Spalding are towns on its banks.

Wellhams Brook. It joins the Parret near Martock in Somerset.

Wellhope Burn. A small affluent of Killhope Burn near Lane End in Durham.

Wellington Brook. An affluent of the Lugg at Marden, Herefordshire.

Wellow Brook. A Somerset stream flowing through Radstock to meet the Lower Avon.

Welney. See Old Croft.

Wenning. It rises in several headstreams near Clapham in Yorkshire and runs into Lancashire to meet the Lune near Hornby after a 14-mile course.

Wensum. A Norfolk river flowing 30 miles from near Tatterset, through Fakenham, to the Yare at Norwich.

Went. A 16-mile tributary of the Don in Yorkshire rising near Newstead Hall.

West Brook. A tributary of the Great Ouse near Fen Station in Huntingdonshire.

West Dipton Burn. A Northumberland stream rising on Stublick Moor and joining Devils Water at Hexham Levels.

Westend. A Derbyshire tributary of the Derwent.

West Water. It flows along the Huntingdonshire border and joins the Forty Foot Drain in Cambridgeshire.

Wey. A six-mile stream in Dorset running from near Upway to the English Channel at Weymouth.

Wey. It rises near Chawton in Hampshire and flows into Surrey, where it passes through Farnham, Godalming, and Guildford, to join the Thames at Weybridge, after a 35-mile course.

Whaplode. A small Lincolnshire river flowing into the Wash near the mouth of the Welland.

Wharfe. A Yorkshire river flowing 60 miles from near Beckermunds, through Otley, Wetherby, and Tadcaster, to meet the Ouse near Cawood.

Wheat Beck. A small affluent of the Rye in Yorkshire.

Wheel Brook. A Somerset affluent of the Frome, rising near Hemington.

Wheelock. A 16-mile affluent of the Dane near Middlewich in Cheshire.

Whetstone Brook. A small affluent of the Soar at Narborough, Leicestershire.

Whicham Beck. A stream falling into the sea at Haverigg in Cumberland.

Whipping. A Nottinghamshire river which joins the Smite at Whatton.

Whiston Brook. A tributary of the Penk at Penkridge in Staffordshire.

Whit Beck. A small affluent of the Cocker near Low Lorton in Cumberland.

White Burn. A tributary of the Alwin in Northumberland.

Whitelake. A tributary of the Brue in Somerset.

White Line. See Line.

Whitendale. An affluent of the Brennard in Yorkshire.

Whitewater. A Hampshire river flowing eight miles to join the Blackwater near Bramshill Common.

Whitsun Brook. A six-mile stream in Worcestershire meeting Piddle Brook near Naunton Beauchamp.

Wicken Water. A small tributary of the Cam near Newport, Essex.

Wid. An Essex river flowing 12 miles to join the Cam near Chelmsford.

Widdale Beck. An affluent of the Ure at Appersett in Yorkshire.

Wilden Beck. A small stream meeting the Tees near Hunderthwaite in Yorkshire.

Wiley. See Wyelye.

Willow Beck. A 10-mile affluent of the Swale near Cundall in Yorkshire.

Willow Brook. A 15-mile tributary of the Nen near Fotheringay in Northamptonshire, rising near Corby.

Wiltshire and Berkshire Canal. It flows 52 miles from the Kennet and Avon Canal at Semington in Wiltshire, past Melksham, Chippenham, and Swindon, into Berkshire, where, passing Shrivensham and Wantage, it meets the Thames at Abingdon.

Wind Burn. A small affluent of the Rede near Rochester, Northumberland.

Windle Brook. A Surrey stream of the Bourne rising on the Hampshire border.

Windrush. It rises in Worcestershire near Cutsdean and flows, through Gloucestershire, into Oxfordshire, past Burford and Witney, to meet the Thames near Standlake after a course of about 30 miles.

Winstar. An 11-mile river rising on Brent Fell in Westmorland and running along the boundary between Lancashire and Westmorland to enter the estuary of the Kent near Meathop.

Winterborne. A Dorset river rising near Winterborne Glenston and meeting the Stour at Sturminster Marshal.

Winterton Beck. A Lincolnshire stream flowing from Flixborough to the estuary of the Humber at Winterton.

Wisbech. A name of the part of the Nene between Wisbech and the Wash.

Wisbech Canal. It runs through Norfolk and along the Cambridgeshire and Norfolk boundary past Wisbech to connect the Nene with the Great Ouse.

Wiske. A Yorkshire river flowing 24 miles from near Ingleby Arncliffe to meet the Swale near Kirkby Wiske.

Wissey. Or Stoke. A Norfolk river rising near East Bradenham and running about 30 miles, through Stoke Ferry, to meet the Great Ouse near Hilgay.

Witham. It rises in Rutlandshire near Market Overton and flows into Lincolnshire, through Grantham, Lincoln, and Boston, to enter the Wash near Frampton, after an 80-mile course.

Withern. A 20-mile river in Lincolnshire flowing into the North Sea near Saltfleet.

Wittle. A small Norfolk river which flows into the Thet at East Harling.

Wiza Beck. A Cumberland stream rising on Faulds Brow, Westmorland, and joining the Wampool near Dockray Hall.

Wolf. An affluent of the Thrushel near Lifton in Devon.

Woodbridge Brook. A tributary of the Avon at Malmesbury, Wiltshire.

Wooler Water. It rises near Steely Crag and passes through Wooler to

join the Till near Westwood Hill, Northumberland.

Worf. A Shropshire river rising at Priorslee and flowing 16 miles, through Shifnal to meet the Severn near Bridgnorth.

Worm Brook. A six-mile tributary of the Dore at Kenderschurch in Herefordshire.

Worth. It runs ten miles from the foot of Crow Hill on the Lancashire border, into Yorkshire, where it meets the Aire near Keighley.

Wrea Brook. A Lancashire stream flowing from Kirkham through Lytham to St. Annnes-on-the-Sea.

Wreak. A Leicestershire river rising near Waltham-on-the-Wold and running 18 miles, through Melton Mowbray, to join the Soar near Rothley.

Wriggle. A Dorset river flowing from near Hillfield to meet the Yeo near Bradford Abbas.

Wye. A nine-mile affluent of the Thames near Hedor in Buckinghamshire, rising near West Wycombe and flowing past High Wycombe.

Wye. A Derbyshire river flowing 20 miles from near Buxton, through Bakewell, to meet the Derwent near Rowsley.

Wye. A 130-mile river which flows through Herefordshire and along the boundary between Gloucestershire and Monmouthshire to enter the Severn Estuary near Mathern. Its source is on Plinlimmon in Wales and the towns of Rhayader, Builth Wells, Hay, Hereford, Ross, Monmouth, and Chepstow are on its banks.

Wyelye. Or Wiley. A Wiltshire river running about 22 miles from Kingstendeverill to meet the Nadder near Wilton.

Wyre. It rises on Wolf Fell Crag and runs 23 miles through Lancashire, past Garstang, to enter the Irish Sea at Fleetwood.

Y

Yar. A three-mile river in the Isle of Wight flowing into the Solent at Yarmouth.

Yare. A Norfolk river running 50 miles from near Shipham, through Norwich, to enter the North Sea at Yarmouth. Between the influx of the Waveney and that of the Bure it forms a tidal mere called Breydon Water.

Yarrow. A Lancashire river rising on Anglesark Moor and flowing about 12 miles to meet the Douglas near Croston.

Yarty. It rises in Somerset near Buckland St. Mary and flows 11 miles through Devon to join the Axe near Kilmington.

Yeading Brook. A Middlesex stream running into the Grand Union Canal at Hanwell.

Yealm. A 12-mile river rising at Yealm Head on Dartmoor and running through Devon to enter the English Channel at Wembury Bay.

Yeo. An 11-mile tributary of the Creedy near Crediton in Devon.

Yeo. A Somerset river rising near Bristol, and flowing into the Bristol Channel at Clevedon.

Yeo. A Devon stream running eight miles to meet the Torridge near Landcross.

Yeo. A 24-mile river rising near Milborne Port on the Somerset border and flowing across a part of Dorset, through Sherborne, into Somerset, where it passes through Yeovil and Ilchester before joining the Parret near Langport.

Yeo. It rises near Compton Martin and flows 14 miles through Somerset to enter the Bristol Channel near Wick St. Lawrence.

INDEX OF THIS WORK

GROUPS OF PICTURES IN THIS BOOK

in Colour, Photogravure, and Black and White

EARTH AND ITS NEIGHBOURS

	PAGE
When Earth Rolled Through Space as a Red-hot Globe ..	<i>Colour facing</i> 137
How the Fires Burst From the Earth	<i>Colour facing</i> 393
The Crumpling and Wearing of the Earth	<i>Colour facing</i> 765
One Hundred Minerals	<i>Colour</i> 1301
Mr. Iguanodon of the Cretaceous Age	<i>Colour facing</i> 1505
A Picture-Museum of Geology	2003
The Earth as It is Today	2129
The Face and Dress of Mother Earth	2371
Rivers, Lakes, and Waterfalls	2497
Photographic-Atlas of Clouds	2869
The Great Groups of Stars	2991
Flames That Would Shrive! Up the Earth	<i>Colour facing</i> 3109
How the Light Tells Us What the Stars Are Made Of ..	<i>Colour facing</i> 3725
Finding Our Way By the Stars	3729

MEN AND WOMEN

Venice in All Her Glory	<i>Photogravure</i> 273
The Ride to the Victory Over Death	<i>Photogravure</i> 373
The Supreme Figures of America	1641
The Last Days of the Immortal Maid	<i>Colour facing</i> 2251
The Supreme Figures of France	<i>Photogravure</i> 2253
The Caesars	2878
Fathers, Mothers, and Children	4131
Great Buildings of London	4231
Walls and Streets of Florence	<i>Photogravure</i> 4721
Temples of the East	<i>Photogravure</i> 5081

ANIMAL LIFE

The Animals Next to Man	<i>Photogravure</i> 161
Members of the Great Cat Family	<i>Photogravure</i> 421
A Kennel-full of Dogs	<i>Photogravure</i> 665
Portraits of the Bear Family	787
Portraits of the Rodent Family	1031
The Cattle of a Thousand Hills	<i>Photogravure</i> 1157
The Great Sheep and Goat Family	1279
Pictures of the Camel's Life	<i>Photogravure</i> 1529
Man's Ancient Friend, The Horse	<i>Photogravure</i> 1901
Kangaroos and Their Cousins	<i>Photogravure</i> 2393
The Birds That Nest in Britain (First Series)	<i>Colour</i> 2765
The Birds That Nest in Britain (Second Series)	<i>Colour</i> 2897
The Birds That Nest in Britain (Third Series)	<i>Colour</i> 3021
The World's Most Beautiful Birds (First Series)	<i>Colour</i> 3141
The World's Most Beautiful Birds (Second Series)	<i>Colour</i> 3261
Eagles and their Relations	<i>Photogravure</i> 3633
Marvellous Colour of the Sea	<i>Colour</i> 185
Fishes of Our British Seas	<i>Colour</i> 5097
Fishes in British Rivers	<i>Colour facing</i> 5197
British Moths and Their Caterpillars	<i>Colour facing</i> 5935
British Butterflies	<i>Colour</i> 6203
Foreign Butterflies and Moths	<i>Colour</i> 1417
Foreign Moth Caterpillars	<i>Colour</i> 6209
British Beetles	<i>Colour</i> 6335

	PAGE
Foreign Beetles	<i>Colour</i> 6336a
Some of Nature's Insect Children	<i>Colour</i> 5713
Friends and Foes Among Insects	6453
Reptiles at Home in the British Isles	<i>Colour</i> 4469
Living Flowers of the Sea	<i>Colour</i> 1553
British and Foreign Shells	<i>Colour</i> 1177
Two Hundred Shells	6580
FAMILIAR THINGS	
What Happens in an Iron Works	51
Cotton Begins Its Great Career	173
Picture-Story of a Piece of Rope	179
Where the China Comes From	303
Picture-Story of Airways	432
Bridges and How They Are Built	549
Picture-Story of a Piano	676
Picture-Story of How We Get Wool	801
Picture-Story of a Sponge	918
Engines of Britain's Railways	<i>Colour</i> 1041
Picture-Story of Rubber	1169
Picture-Story of Paper	1295
Picture-Story of the Motor-Tyre	1409
Picture-Story of Common Salt	1541
Picture-Story of a Candle	1669
Picture-Story of a Brick	1789
One Hundred Peeps Through a Microscope	1909
Picture-Story of Pen and Pencil	2035
Picture-Story of the Roads	2159
Picture-Story of Tea and Sugar	2283
Picture-Story of the Newspaper	2405
Picture-Story of a Country House	2527
Picture-Story of a Ship	2647
Picture-Story of a Bell	2779
Picture-Story of Cutlery	2910
Man's Mechanical Giants	3031
Picture-Story of Leather	3154
Picture-Story of the Mint	3272
Picture-Story of Bookbinding	3385
Railway Engines of Many Lands	<i>Colour</i> 3509
Picture-Story of a Box of Matches	3641
Picture-Story of the Motor-Car	3761
Picture-Story of Glass	3881
Picture-Story of Sports Equipment	4127
Picture-Story of Bags and Baskets	4259
Pictures of Life Underground	4379
Picture-Story of Water	4504
Picture-Story of the Post	4631
Picture-Story of Canals	4871
Heraldry in Pictures	<i>Colour</i> 925, 4985
Peeps at Broadcasting House	5111
Picture-Story of a Railway Engine	5235
Picture-Story of Timber	5351
Picture-Story of a Pair of Shoes	5481
Picture-Story of Water Power	5601

GROUPS OF PICTURES

						PAGE
Picture-Story of Our Fisheries	..	..	..	..	..	5723
Picture-Story of Quarrying	..	..	..	..	..	5846
Picture-Story of Irrigation	..	..	..	..	..	5969
Picture-Story of Silk and Rayon	..	..	..	..	..	6091
Picture-Story of Tunnelling	..	..	..	..	..	6215
Picture-Story of an Aeroplane	..	..	..	..	..	6337
One Hundred Mechanical Movements	..	..	..	..	..	6349
Picture-Story of Pins and Needles	..	..	..	..	..	6463
Picture-Story of the Diver's Work	..	..	..	..	..	6587
Picture-Story of the Cinema	..	..	..	..	..	6705
Flags of the World	..	..	..	..	Colour	6965
ART						
The Everlasting Glory of Art	..	..	..	..	Photogravure	69
The Colour of the Ancient Empires	..	..	..	..	Colour	317
The Dawn of Italy's Golden Age	..	..	..	..	Photogravure	569
Pictures of Raphael and His Times	..	..	..	..	Photogravure	821
Pictures From the Age of Titian	..	..	..	..	Photogravure	937
Famous Pictures of the Flemings	..	..	..	..	..	1053
Masterpieces of Holbein	..	..	..	..	Photogravure	1189
The Pictures of Velasquez	..	..	..	..	Photogravure	1313
The Pictures of Rembrandt	..	..	..	..	..	1561
Pictures by French Artists	..	..	..	..	Photogravure	1685
Pictures From Our Golden Age	..	..	..	..	Photogravure	2053
Masters of British Art	..	..	..	..	Colour	2177
Pictures of British Landscapes	..	..	..	..	..	2303
Pictures From Turner's Time	..	..	..	..	..	2421
Pictures by English Artists	..	..	..	..	Photogravure	2549
British Paintings of Our Time	..	..	..	..	Photogravure	2669
Pictures of France Out-of-Doors	..	..	..	..	Photogravure	2793
New Influences in Art	..	..	..	..	..	2925
A Gallery of French Paintings	..	..	..	..	Photogravure	3169
Paintings by American Artists	..	..	..	..	Photogravure	3289
Pictures From Modern Artists	..	..	..	..	Photogravure	3401
Famous Pictures of the World	..	(First Series)	3533	..	(Second Series)	3653
Architecture Through the Ages	..	..	..	..	..	3770
A Gallery of European Paintings	..	..	..	..	..	3773
Sculptures of Egypt and Assyria	..	..	..	..	Photogravure	3893
Sculptures of Early Greece	..	..	..	..	..	4029
Great Sculptures of Old Greece	..	..	..	..	Photogravure	4145
Art Treasures From Old Greece	..	..	..	..	Photogravure	4273
Sculptures From the Old Empires	..	..	..	..	..	4397
Sculptures of Italy's Golden Age	..	..	..	..	Photogravure	4525
A Little Gallery of Sculptures	..	..	..	..	Photogravure	4649
Works By British Sculptors	..	..	..	..	Photogravure	4769
Sculptures Ancient and Modern	(1st, 2nd, and 3rd Series)	4897, 5007,	5129	..	..	..
Sculptures Ancient and Modern	..	..	(Fourth Series)	Photogravure	5253	..
Buildings of the Old World	..	..	..	..	Photogravure	5381
Buildings of Greece and Rome	..	..	..	..	Photogravure	5505
Architecture of the East	..	..	..	..	Photogravure	5629
Three Great Styles of Building	..	..	..	..	Photogravure	5747
Norman and Gothic Buildings	..	..	..	..	Photogravure	5875
Buildings of Europe's Golden Age	..	..	..	..	Photogravure	5995
Great Buildings of Italy	..	..	..	..	Photogravure	6115

Homes of England	6245
Buildings of Western Europe	6361
Architecture of Two Centuries	6473
Architecture of Our Time	6613
The Art of the Craftsmen	6733
Relics of Early Civilisations	6861
Links with Days Long Past	6989

PLANT LIFE

The Glory of the Grass	<i>Colour</i>	581
The 45 Species of British Ferns	<i>Colour</i>	1797
Flowers and Their Visitors	<i>Colour</i>	2045
The Big Group of Food Plants .. .. .	.. .. .	2437
Fifty Plants Precious to Men	<i>Colour</i>	2685
The Grasses of the Field .. .. .	.. .. .	3307
The British Seaweed Family	<i>Colour</i>	3413
Wild Fruits of the Countryside	<i>Colour</i>	3665
Pictures of the Timber Trees .. .. .	.. .. .	3905
Pictures of the Beauty Trees .. .. .	.. .. .	4151
Flowers of the Hedgerow	<i>Colour</i>	4285
Flowers of the Meadow	<i>Colour</i>	4417
Flowers of the Cornfield	<i>Colour</i>	4661
Flowers of the Woodland	<i>Colour</i>	4905
Flowers of the Heath	<i>Colour</i>	5141
Flowers of the Downland	<i>Colour</i>	5393
Flowers of the Mountain	<i>Colour</i>	5641
Flowers of the Seaside	<i>Colour</i>	5643
Flowers of Bogland and Stream	<i>Colour</i>	6127
One Hundred Flowers of the Garden	<i>Photogravure</i>	6377
Two Hundred Botanical Terms .. .. .	.. .. .	6494

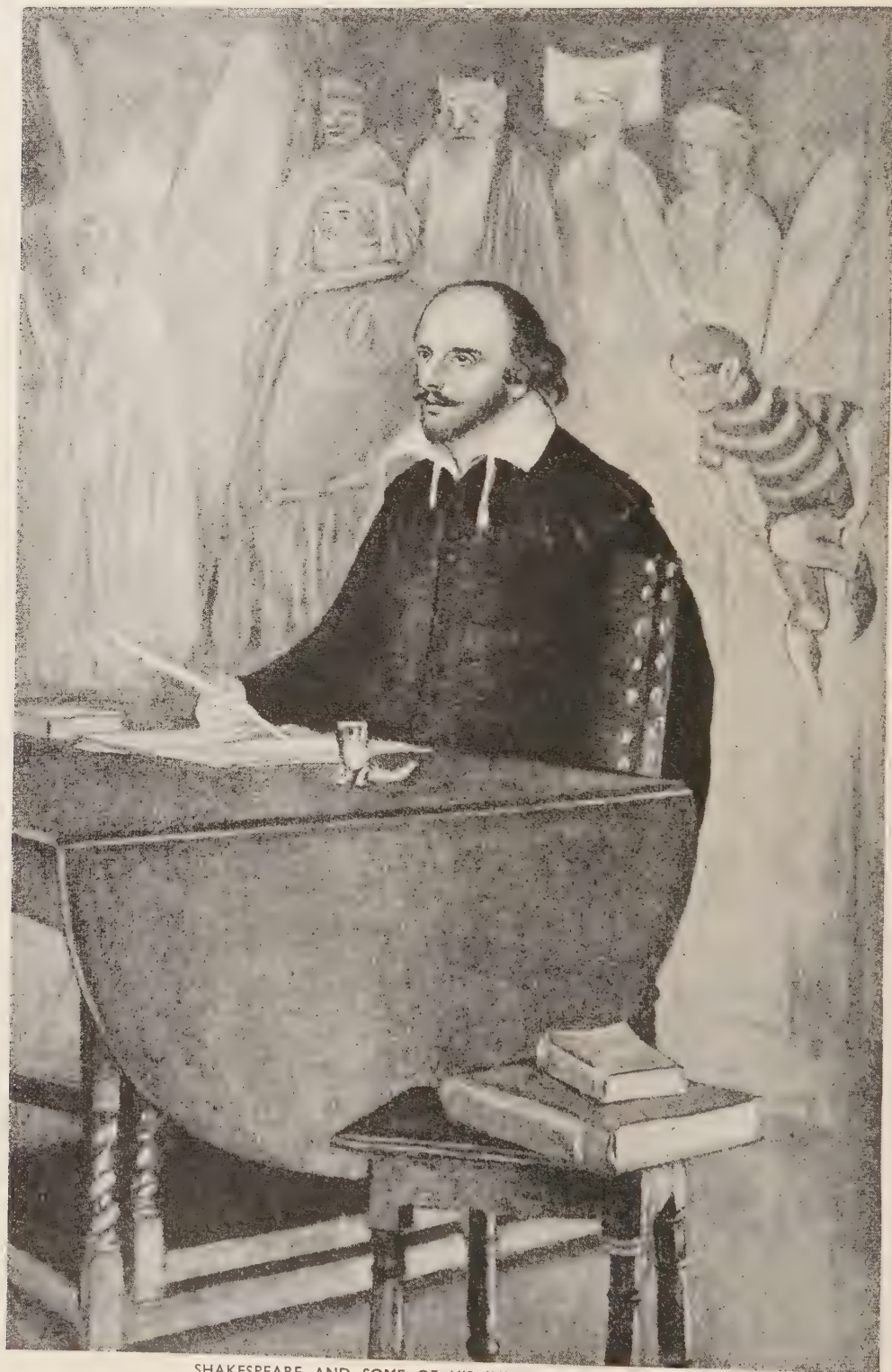
COUNTRIES AND HISTORY

The Coasts of Our Homeland .. .. .	.. .. .	345
Hills and Mountains of England .. .. .	.. .. .	469
The Oldest Picture of Our History	<i>Colour</i>	709
Scenes of Our Beautiful Homeland	<i>Photogravure</i>	841
The Ruined Walls of Britain .. .. .	.. .. .	961
The Great Days of the Tudors	<i>Photogravure</i>	1077
Links With Tudor England .. .. .	.. .. .	1085
What to See in London .. .. .	.. .. .	1215
The Beauties of Scotland .. .. .	.. .. .	1335
The Clash of Nations	<i>Photogravure</i>	1445
Pictures of Wales .. .. .	.. .. .	1459
Rides on English Railways .. .. .	.. .. .	.. .. .
Southern .. .. .	.. .. .	1589
Western .. .. .	.. .. .	1711
Northern and Eastern .. .. .	.. .. .	1831
Some of Britain's Ancient Monuments .. .. .	.. .. .	1949
The Building of a Great Empire	<i>Photogravure</i>	2077
Canada and Her Wide Open Spaces	<i>Photogravure</i>	2197
Canada and Newfoundland .. .. .	.. .. .	2325
Pictures of Australia .. .. .	.. .. .	2577
Pictures of New Zealand .. .. .	.. .. .	2702
The Great Sights of India	<i>Photogravure</i>	2949
Pictures of Beautiful Ireland .. .. .	.. .. .	3069

GROUPS OF PICTURES

	PAGE
Pictures of British South Africa	3189
Pictures of British Africa	3319
Scenes in Empire Outposts (East) 3425 (West)	3559
Pictures of the United States <i>Photogravure</i>	3801
The Pleasant Land of France	4051
Pictures of Beautiful Paris <i>Photogravure</i>	4165
Pictures of France at Peace	4175
Pictures of Germany <i>Photogravure</i>	4429
Five Countries of South-East Europe	4557
Pictures of Italy Today	4919
Pictures of Poland	5034
Norway, Sweden, and Denmark	5158
The Wonder Land of Spain	5279
Pictures and Maps of Spain and Portugal	5403
Holland and Her Colonies	5533
Pictures of Belgium	5653
Pictures and Maps of the Near East	5777
Russia and Siberia	5903
Pictures of U.S.S.R.	6025
Pictures and Maps of Turkey	6139
Countries of the Middle East	6271
Pictures and Maps of Persia	6393
Pictures of China <i>Photogravure</i>	6505
Japan and Korea	6621
The Native Peoples of Africa <i>Photogravure</i>	6745
Maps and Pictures of Africa	6755
People and Towns of Egypt	6879
Pictures of Latin America	7009
Atlas of the World <i>Colour</i>	7077
Atlas of England	7109
The Supreme Event in History <i>Colour</i>	1661
Fallen Rome as It is Today <i>Photogravure</i>	1777
Pictures of the Old World Gods <i>Photogravure</i>	3521
A Picture Museum of History	4859
Seven Wonders of the Old World <i>Photogravure</i>	4885
King Arthur and His Knights <i>Photogravure</i>	6945
POWER	
Picture-Diagrams of Electricity	1349
Pictures of the Telegraph	1471
Picture-Story of the Cable	1605
Picture-Story of Coal	2839
Picture-Story of Oil	3081
Picture-Story of Gas	3447
The Power Inside a Ship	3703
A Great Ship and the Life Within Her	3817
Pictures of the Railway (First Series) 4069 (Second Series)	4191
Pictures of the Aeroplane	4687
LITERATURE AND THE BIBLE	
The Lovely Books of Long Ago <i>Colour</i>	489
Scenes from Shakespeare's Plays	1103
One Hundred Scenes in Holy Land	3463
The Childhood of Jesus	3591
Pictures of Jesus 600 Years Old <i>Colour</i>	3961

SHAKESPEARE, KING OF POETS



SHAKESPEARE AND SOME OF HIS IMMORTAL CHARACTERS

INDEX OF POEMS AND RHYMES

THIS is probably the most complete index of verses for boys and girls appearing in any book. A poem is entered three times, so that it can be found if we know either the title, the first line, or the author's name.

The collection of poetry in the Children's Encyclopedia is made up of separate pieces, and they represent every kind of verse. There are sonnets, songs, odes, dramatic pieces, humorous verses, hymns, and psalms; nursery rhymes in English and French; folk-lore songs of Germany; songs set to music; nonsense verses; and selections from Shakespeare and many other poets whose works are too long to quote as a whole.

All the poems of an author are together under his name. They are *indented* under the name; that is to say, the titles begin a little way on in the line, not straight with the other lines. All poems with these indented lines are by the author whose name is above them.

To find a poem, look under the first line, the title, or the author's name. No notice is taken of *A* or *The*, so that if you are looking for *The Spider and the Fly* you should look up *Spider*.

A, B, C, and D .. 6779	Allingham, William	Apologia .. 6286
A, B, C, listen to me (with music) 129	<i>Irish poet and editor (1824-1889)</i>	Apple Winds, The .. 5790
A, B, C, tumble down D .. 1600	Fairies, The .. 732	Arabia's desert ranges (James Montgomery quoted) .. 240
A apple-pie, B bit it .. 7047	Memory, A .. 5422	Arab's Farewell to His Steed, The .. 5912
A for the Aconite, first of the year .. 5424	Robin Redbreast .. 846	Are you not weary in your distant places .. 6778
A garden is a lovesome thing (T. E. Brown quoted) .. 4082	Wishing .. 1723	Armies in the Fire .. 4802
A is an Apple Round and Red .. 6526	All pains the immortal spirit must endure (M. Arnold quoted) .. 860	Arming of Pigwiggan, The .. 1466
A is an Archway to Fairyland Gay .. 1342	All people that on earth do dwell .. 5912	Arms and the man I sing, who first from Troy (Virgil quoted) .. 5553
A is for Alfred, who Angled at Ayr .. 2367	All that glisters is not gold (Shakespeare quoted) .. 6042	Arnold, Matthew
A is for Alice .. 5916	All the Children .. 1226	<i>English poet and critic (1822-1888)</i>
A's for the Antelope .. 6774	All the world's a stage (Shakespeare quoted) .. 984, 6048	Forsaken Merman, The .. 351
A was an Archer .. 5672	All Things Bright and Beautiful .. 3204	Last Word, The .. 5913
Abide with me .. 2459	All things by immortal power (Francis Thompson quoted) .. 4713	Lines written in Kensington Gardens .. 7034
Abou Ben Adhem and the Angel .. 2213	All Things Shall Pass Away .. 5173	Quiet Work .. 850
Above the edge of dark appear the lances of the sun .. 1340	All things that are on earth shall wholly pass away .. 5544	Shakespeare .. 732
Above the pines the moon was slowly drifting .. 4315	All this night shall Chanticleer .. 3936	West London .. 6405
Above yon sombre swell of land .. 2582	All worldly shapes shall melt in gloom .. 2085	Arnold Quotations:
Across the fields of yesterday .. 5669		All pains the immortal spirit .. 860
Across the narrow beach we flit .. 5043		But fly our paths, our feverish contact fly! (The Scholar-Gipsy) .. 4077
Adams, C. H. (American author)	Alma-Tadema, Laurence	Foiled by our fellow-men .. 4088
Lights Out .. 99	<i>English novelist and poet (died 1940)</i>	Arrow and the Song, The .. 968
Adams, John Quincy	If No One ever Marries Me .. 479	Arsenal at Springfield, The .. 2087
American president (1767-1848)	King Baby on His Throne .. 479	Art thou pale for weariness? .. 6522
Man Wants a Great Deal .. 5175	Little Sister, The .. 478	Art thou poor, yet hast thou golden slumbers? .. 5173
Adams, Sarah Flower	March Meadows .. 478	As I came thro' Sandgate .. 7042
English poet (1805-1848)	Nesting Hour, The .. 478	As I walked by myself .. 102
Nearer to Thee .. 1722	New Pelisse, The .. 478	As I was going by Charing Cross .. 1840
Adcock, A. St. John	Playgrounds .. 478	As I was going to St Ives .. 3077
English editor and critic (1864-1930)	Twilight Song, A .. 2206	As I was going to sell my eggs .. 7052
House of Memories, The .. 5176	Alone I walked the ocean strand .. 2206	As I was going up Pippen Hill .. 1344
In the Making .. 6149	Alone she faced them, one unlettered girl .. 5664	As I went over the water .. 1468
Song in Winter, A .. 5053	Alphabet of Names, An .. 6903	As I went to Bonner .. 1600
Addison, Joseph	Although I enter not .. 5177	As in the sunshine of the morn .. 3697
English poet and essayist (1672-1719)	Amends to Nature .. 4931	As Life's unending column pours .. 5791
Lord my pasture shall prepare .. 99	Ancient story I'll tell you anon .. 6521	As little Jenny Wren .. 1600
Spacious firmament on high, The .. 848	And all the faith, the virtue of my heart (Shakespeare quoted) .. 6295	As the days lengthen .. 1724
'Twas then great Marlborough's mighty soul (Campaign quoted) .. 1731	And are ye sure the news is true? .. 3568	As through the land at eve we went .. 3440
Address to an Egyptian Mummy .. 5665	And as for me, though I ken but lite (Chaucer quoted) .. 366	As Tommy Snooks and Bessy Brooks .. 6780
Address to His Native Soil .. 5663	And did those feet in ancient time .. 6767	Assyrian came down like a wolf on the fold, The .. 2958
Adonais .. 6765	And has the Spring's all glorious eye .. 6633	At Christmas I no more desire a rose (Shakespeare quoted) .. 6536
Ae Fond Kiss .. 6767	And he shall call the Romans by his name (Virgil quoted) .. 5554	At Even, Ere the Sun was Set .. 5552
After him she rode with so much speed (Spenser quoted) .. 5920	And is there care in Heaven? .. 6894	At five o'clock he milks the cow .. 5800
After Sixty Years .. 1720	And more to lull him in his slumber soft (Spenser quoted) .. 742	At Flores in the Azores Sir Richard Grenville lay .. 4437
Afterwards .. 6769	And oftentimes, excusing of a fault (Shakespeare quoted) .. 6536	At Last .. 4314
Ah, my sweet home, Jerusalem (Song of Mary quoted) .. 1928	And Shall Trelawny Die? .. 2584	At Sea .. 1597
Ahab Mohammed .. 5789	And so, from hour to hour, we ripe and ripe (Shakespeare quoted) .. 336	At the Church Gate .. 5177
Akers, Elizabeth	And thou hast walked about .. 5665	At the Gate .. 6890
Pen name of Elizabeth Allen (1832-1911)	And where have you been, my Mary? .. 6642	At the king's gate the subtle noon .. 847
Little Feet .. 6288	And Wilt Thou Leave Me Thus? .. 4802	At the midnight, in the silence .. 4801
Aladdin .. 966	Anderson, Alexander	Au Clair de la Lune (with music) .. 4441
Alcott, Louisa M.	<i>Scottish poet (1845-1909)</i>	Au Temps Jadis .. 734
American author (1832-1888)	Cuddle Doon .. 3081	Auld Lang Syne .. 2208
Little Kingdom I Possess, A .. 100	Angels and archangels may have gathered there .. 3935	Auld Robin Gray .. 5552
Aldrich, Thomas Bailey	Angels are Whispering, The .. 4060	Austin, Alfred
American poet (1836-1907)	Angels Holy, High and Lowly .. 6149	<i>English author and poet (1835-1913)</i>
Memory .. 227	Anger .. 3204	Queen and the Flowers, The .. 845
Alexander, Cecil Frances	Anger in its time and place .. 3204	Autumn .. 5550
Irish poet (1818-1895)	Annabelle Lee .. 6282	Autumn Evensong .. 4802
All Things Bright and Beautiful .. 3204	Annie Laurie .. 477	Awake, arise, and rub your eyes .. 6780
Burial of Moses, The .. 1223	Another Athens shall arise (Shelley quoted) .. 2598	Awake My Soul .. 3935
Once in Royal David's City .. 3941	Answer to a Child's Question .. 1721	Away, Away, from Men and Towns .. 6646
There is a Green Hill .. 5175		Away, away, my steed and I .. 5415
Alexander Selkirk .. 1721		
All are architects of Fate .. 2827		
All day long they come and go .. 1090		
All honour to him who shall win the prize .. 4804		

- Baby and I 734
 Baby at Play 5800
 Baby, baby, bye 478
 Baby, baby, lay your head 1467
 Baby Goes to Town 5298
 Baby moon, 'tis time for bed 478
 Baby, see the flowers 4190
 Baby Sleeps 7046
 Baby was sleeping, A 4060
 Baby wept, The 7046
 Baby-land 6288
 Babylon 5670
 Baby's got a new pelisse 478
 Baby's got no legs at all 478
Bailey, Philip James
English poet (1816-1902)
 End of Life, The 352
Baillie, Joanna
Scottish poet and dramatist (1762-1851)
 Good-night, Good-night 732
 Bairnies cuddle doon at night 3081
 Baker's Wife, The (with music) 4443
 Ballad of Agincourt, The 965
 Bang! Who goes there? (with music) 4442
Banks, George Linnaeus
English writer (1821-1881)
 What I Live For 227
 Banner of England 4797
 Bannockburn 3700
 Barbara Frietchie 4679
Barbauld, Anna Letitia
English writer and poet (1743-1825)
 Life 476
 Barber, barber, shave a pig 1840
Barham, Richard Harris
English clergyman (1788-1845)
 Jackdaw of Rheims, The 4927
Baring, Maurice
English poet (1874-1945)
 Julian Grenfell 5663
Baring-Gould, Sabine
English clergyman (1834-1924)
 Now the Day is Over 4189
Barnes, William
Dorset dialect poet (1801-1886)
 Field Path, The 5047
 Joy Passing By 5292
 Lullaby 4804
 Mary Wedded 4576
 Mother's Dream, The 6635
 My Love is Good 4575
 Old Folk Dead, The 4576
 Old Friend, An 4575
 Woak Hill 4575
 Baron's Last Banquet, The 2205
Barr, Matthias
German verse writer
 Moon, so Round and Yellow 7046
 Only a Baby Small 99
 Bartholomew is very sweet 6160
 Based on the crystalline sea (Shelley quoted) 674
 Bat, bat, come under my hat 1840
Bates, David
American author (1810-1870)
 Speak Gently 1955
 Bath-Time 478
 Battle-Hymn of the Republic 4065
 Battle of Blenheim, The 3446
 Battle of the Baltic, The 3199
Baxter, Richard
English preacher (1615-1691)
 Lord, It Belongs Not to My Care 226
 Beati Illi 5798
Beaumont, Francis
English dramatist and poet (1584-1616)
 On the Tombs in Westminster Abbey 5551
 Because of you we will be glad and gay 5663
Becker, Charlotte
 Envoy 604
 Bedouin Song 4189
 Bed-Time 478
Beeching, Henry Charles
English clergyman and poet (1859-1919)
 Prayers 6283
 Beechwood fires are bright and clear 2209
Beers, Ethel Lynn
American author (1827-1879)
 Weighing the Baby 6160
 Befell it in that season on a day (Chaucer quoted) 365
 Before Action 6771
 Before Battle 1092
 Before the beginning of years 5914
 Before the door—the opening jaws of hell (Virgil quoted) 5556
 Before the winter's haunted nights 6157
Begbie, Harold
English author and poet (1871-1929)
 Bugle, The 6888
 How Every Wise Child Should Live 474
 One Clear Call, The 6152
 Sole Bidder, The 6407
Begbie, Janet
English story writer and poet
 If I Fall 6888
 Beggar Maid, The 2827
 Behold! a giant am I 3076
 Behold her, single in the field 5054
 Being your slave, what should I do but tend 6415
Belestier, Elliot
American author
 God's Fool 5797
Bell, Sir Harold Idris
English poet and writer (born 1879)
 Joan of Arc 5664
Bello, Hilaire
English poet (born 1870)
 Written in a Child's Book 4802
 Bells, The 2825
 Bells of Heaven, The 7035
 Bells of London Town, The 6654
 Below the thunders of the upper deep 4182
Bennett, Henry Holcomb
American author (died 1913)
 Flag Goes By, The 604
Benson, Arthur Christopher
English author and poet (1862-1925)
 Land of Hope and Glory 98
 My Old Friend 7044
 My Will 6158
Béranger, Pierre Jean de
French song writer (1780-1857)
 Grandmother's Tale, The 97
 My Little Corner 2828
 To My Friends Become Ministers 604
 When I am Gone 1718
 Beside still waters, where the grass 5048
 Bessy Bell and Mary Gray 4572
 Best School of All, The 4929
 Better Land, The 3200
 Better Things 3570
 Better to smell the violet cool than sip the glowing wine 3570
 Better trust all, and be deceived 6771
 Between nose and eyes a strange contest arose 3816
 Between the dark and the daylight 4573
 Beyond the Last Lamp 6771
 Bible is the Book of God, The 120
 Bid me to live, and I will live 1839
 Big and Little Things 2088
 Billy Boy 1599
 Billy Pringle had a little pig (with music) 6773
Binyon, Laurence
English author and poet (1869-1943)
 For the Fallen 7042
 O World, Be Nobler 5670
 Birch and green holly, boys 1840
Bird, Robert
American novelist (1803-1854)
 Fairy Folk, The 5295
 Bird of the wilderness 5664
 Birds 4799
 Birds are singing round my window 4799
 Birds, Beasts, and Fishes 4444
 Birds of a feather flock together 852
 Birthday, A 4060
 Birthday Thought, A 5291
 Bishop Hatto 4181
 Blackbird at the Gate, The 4189
 Black-haired gaunt Paulinus, The 5047
Blackie, John Stuart
Scottish professor (1809-1895)
 Angels Holy, High and Lowly 6149
 Song for Stout Workers, A 5668
 Blake 5550
Blake, William
English poet and artist (1757-1827)
 Echoing Green, The 1838
 Infant Joy 6900
 Laughing Song, A 358
 Little Lamb 476
 Nurse's Song 1955
 Piping Down the Valleys Wild 99
 Shepherd, The 7046
 Sleep, Beauty Bright 848
 Tiger, The 3700
 Till We Have Built Jerusalem 6767
Blake Quotations :
 Bring me my Bow of burning gold! (Jerusalem) 5868
 To see the world in a grain of sand 4088
 Blame not the times in which we live 6156
 Bless the Lord, O my soul (Psalm 103) 2232
 Bless you, bless you, bonnie bee 734
 Blessed is the man that walketh not in the counsel of the ungodly (Psalm 1) 2229
 Blest be the song that brightens (Wordsworth quoted) 1269
 Blest is the man whose heart and hands are pure 5798
 Blind Boy, The 1090
 Blind Highland Boy, The 4931
 Bliss was it in that dawn to be alive (Wordsworth quoted) 2472
 Bloom is on the way once more 5667
 Blossoms 6894
 Blow, Blow, thou Winter Wind (Shakespeare quoted) 984;
 with music 5302
 Blow, Bugle, Blow 3440
 Blow, wind, blow! and go, mill, go! 6412
 Blue were her eyes as the fairy flax 240
Blunt, Wilfrid Scawen
English traveller and poet (1840-1922)
 He is not a Poet 6405
 Boadicea 968
 Roats at Night 5663
 Bobby Shaftoe's gone to sea 4934
 Bodily eyes were utterly forgotten (Wordsworth quoted) 3958
 Bog Love 6778
 Bogie Man, The 5800
Boker, George H.
American author (1823-1890)
 Dirge for a Soldier 5289
Bonar, Horatius
Scottish clergyman (1808-1889)
 Thy Way, Not Mine, O Lord 5792
 Bonnie Jean 1838
 Bonny Kilmeny gae'd up the glen 5039
 Bounce Buckram, velvet's dear 1840
Bourdillon, Francis William
English poet (1852-1921)
 Light 477
 Bowed by the weight of centuries, he leans 6035
 Bow-wow, says the dog 4808
 Bow, wow, wow, whose dog art thou? 1468
 Boy and the Angel, The 225
 Boy and the Brook, The 1956
 Boy stood on the burning deck 4190
 Boy was Born at Bethlehem, A 5667
 Boy's Song 2213
 Boy's Thanksgiving, A 3445
Boyle, Sarah
American author (1812-1869)
 Voice of the Grass, The 227
Bracken, Thomas
New Zealand
 Brave Old Duke of York, The (with music) 3442
 Break! Break! Break! 4315
 Breakfast Song, The 5800
 Breaking waves dashed high, The 2212
 Breathes a sound above all others 2828
 Breathes there the Man 7034
 Breezy call of incense-breathing morn (Thomas Gray quoted) 2103
Breton, Nicholas
English poet (1545-1626)
 Phillida and Corydon 2958
Brewer, Ebenezer Cobham
English writer (1810-1897)
 Little Drops of Water 3330
 Brian O'Lin had no breeches to wear 5297
Bridges, Robert
English poet (1844-1930)
 Gay Robin 4800
 Brief words shall fit the case (Virgil quoted) 5555
 Bring Back Your Sheep 7041
 Bring me my Bow of burning gold! (William Blake quoted) 5868

Brontë Emily

- English novelist and poet (1818-1848)*
 No Coward Soul is Mine . . . 3566
 Brook, The . . . 3567
Brooke, Rupert
English poet (1888-1915)
 The Soldier . . . 228
Brooke, Stopford
Irish author and critic (1832-1916)
 Earth and Man, The . . . 6893
 Lord is my Shepherd, The . . . 5048
 Brow bender, Eye peeper . . . 5800
Brown, Thomas Edward
Manx poet and preacher (1830-1897)
 My Garden . . . 98
 Brown eyes, straight nose . . . 6038
Browne, William
English poet (1591-1643)
 Address to His Native Soil . . . 5663
 Countess of Pembroke, The . . . 3810
Browning, Elizabeth Barrett
English poet (1806-1861)
 Child's Thought of God, A . . . 731
 Cry of the Children, The . . . 475
 Hector in the Garden . . . 5421
 How Do I Love Thee? . . . 3457
 Man's Requirements, A . . . 848
 North and the South, The . . . 4568
 Poet and the Bird, The . . . 3438
E. B. Browning Quotations :
 Happy violet, hiding from the
 roads, The . . . 3457
 Or at times a modern volume . . . 3455
Browning, Robert
English poet (1812-1889)
 Boy and the Angel, The . . . 225
 Epilogue (Asolande) . . . 4801
 Home Thoughts from Abroad . . . 2208
 How they Brought the Good
 News from Ghent . . . 3437
 Incident in the French Camp . . . 1345
 Patriot, The . . . 358
 Pied Piper of Hamelin, The . . . 6031
 Pippa's Song . . . 6900
 Prospector . . . 967
 Up at a Villa—Down in the City . . . 3438
Robert Browning Quotations :
 In man's soul arise . . . 4088
 One who never turned his back . . . 3462
Bruce, Michael
Scottish poet (1746-1767)
 To the Cuckoo . . . 968
Bryant, William Cullen
American poet and editor (1794-1878)
 Love of God, The . . . 5544
 Planting the Apple Tree . . . 603
 To a Waterfowl . . . 226
Buchan, John (Lord Tweedsmuir)
Scottish author and poet (1875-1940)
 Babylon . . . 5670
Buchanan, Robert
Scottish poet and novelist (1841-1901)
 Coming of Spring, The . . . 6892
 Judas Iscariot . . . 5796
 Love . . . 1954
 Buckle, The . . . 4574
 Bugle, The . . . 6888
 Build me straight, O worthy
 Master . . . 2647
 Builders, The . . . 2827
 Bumpety, Bumpety, Bump . . . 3080
Bunyan, John
English Puritan writer (1628-1688)
 Shepherd Boy Sings in the Valley
 of Humiliation, The . . . 228
 Burial of Moses, The . . . 1223
 Burial of Sir John Moore, The . . . 1465
 Burial of the Linnet, The . . . 1226
Burns, James Drummond
Scottish preacher and poet (1823-1864)
 Evening Hymn, An . . . 357
Burns, Robert
Scottish poet (1759-1796)
 Ae Fond Kiss . . . 6767
 Auld Lang Syne . . . 2208
 Bannockburn . . . 3700
 Bonnie Jean . . . 1838
 Highland Mary . . . 5294
 How Lang and Dreary is the
 Night . . . 7034
 John Anderson . . . 228
 Man's a Man for a' That, A . . . 2826
 Mary Morison . . . 357
 O Wert Thou in the Cauld Blast . . . 1092
 Red, Red Rose, A . . . 731
 Selkirk Grace, The . . . 358
 To a Mountain Daisy . . . 846

- To a Mouse . . . 6897
 To Mary in Heaven . . . 6633
 Ye Banks and Braes . . . 5174
Burns Quotations :
 But fare you weel, auld Nickie-
 ben! . . . 2224
 Is there a man whose judgment
 clear . . . 2222
 Is there for honest poverty (A
 Man's a Man For a' That) . . . 2224
 My love is like a red, red rose . . . 2224
 She is a winsome wee thing . . . 2222
 We twa hae run about the braes . . . 2224
Burroughs, John
American poet (1837-1921)
 My Own Shall Come to Me . . . 5422
 Bury the Great Duke . . . 4057
 But fare you weel, auld Nickie-
 ben! (Burns quoted) . . . 2224
 But fly our paths, our feverish
 contact fly! (Matthew Arnold
 quoted) . . . 4077
 But let my due feet never fail
 (Milton quoted) . . . 1232
 Butterflies and the Snail, The . . . 3697
 Butterflies perched on a mossy
 brown stile, A . . . 7052
 Butterflies' Ball, The . . . 4806
 Buttons a farthing a pair . . . 5545
Butts, Mary F.
American writer (1836-1902)
 Baby Goes To Town . . . 5298
 By all the glories of the day . . . 6771
 By foreign hands thy dying eyes
 were closed (Pope quoted) . . . 1611
 By Nebo's lonely mountain . . . 1223
 By the rivers of Babylon, there we
 sat down (Psalm 137) . . . 2232
 Bye, Babv Bunting . . . 6903
Byrd, William
English musical composer (1543-1623)
 Since singing is so good a thing
 (quotation) . . . 142
Byrom, John
English poet (1692-1763)
 Christians, Awake! . . . 5043
Byron, Lord
English poet (1788-1824)
 Destruction of Sennacherib . . . 2958
 Isolation of Genius, The . . . 6770
 My Boat is on the Shore . . . 358
 Napoleon's Farewell . . . 7043
 Ride on a Wild Horse, The . . . 5415
 She Walks in Beauty . . . 6890
 Vision of Belshazzar, The . . . 1722
Byron Quotations :
 Dear Becher, you tell me to mix
 with mankind . . . 2596
 Fires of death (Childe Harold) . . . 2596
 Then rose from sea to sky the
 wild farewell (Don Juan) . . . 2598
Byron, Mary
South African poet
 Call of the Veld, The . . . 5048
 Call for the robin-redbreast and
 the wren . . . 5662
 Call no faith false which e'er has
 brought . . . 6155
 Call of the Veld, The . . . 5048
Campbell, Thomas
Scottish poet (1777-1844)
 Battle of the Baltic, The . . . 3199
 Irish Harper, The . . . 5792
 Last Man, The . . . 2085
 Lord Ullin's Daughter . . . 1466
 Men of England . . . 1596
 Ye Mariners of England . . . 5293
Campion, Thomas
English poet and musician (1567-1620)
 Country and City . . . 5293
 There is a garden in her face
 (quotation) . . . 1928
 Upright Life, The . . . 1092
 Canadian Boat Song, A . . . 3569
 Cane-bottomed Chair, The . . . 380
Canton, William
English author and editor (1845-1926)
 Heights and Depths . . . 4065
 Captain's Daughter, The . . . 5298
Carew, Lady Elizabeth
English poet (died 1635)
 True greatness . . . 731
Carew, Thomas
English poet (1595-1645)
 Unfading Beauty, The . . . 5420

- Carey, Henry**
English poet and musician (1690-1743)
 God Save the King . . . 7033
 Sally in our Alley . . . 228
 Cargoes . . . 4800
Carlyle, Thomas
Scottish author (1795-1881)
 Today . . . 6405
Carman, William Bliss
Canadian author (1861-1929)
 Gift, The . . . 5291
 Carrion Crow, The . . . 4570
Carroll, Lewis (C. L. Dodgson)
English author (1832-1898)
 Walrus and the Carpenter, The . . . 2337
Carruth, William Herbert
American author (1839-1924)
 Each in His Own Tongue . . . 3445
 Carthage, an ancient State which
 settlers held (Virgil quoted) . . . 5553
Cary, Alice
American author (1820-1871)
 Elihu . . . 1089
 Casabianca . . . 4190
 Cat came adding out of a barn, A . . . 5296
 Cataract of Lodore, The . . . 3698
Catullus
Roman lyric poet (84-54 B.C.)
 Let her not look for love of mine
 hereafter (quotation) . . . 5428
 C'est la mere Michel qui a perdu
 son chat . . . 7041
Chadwick, John White
American minister (1840-1904)
 Eternal Ruler of the Ceaseless
 Round . . . 846
Chalkhill, John
English poet (flourished about 1600)
 In Praise of a Countryman's Life . . . 5551
 Chambered Nautilus, The . . . 6155
 Character of a Happy Life, The . . . 4803
 Charcoal-Burner, The . . . 6152
 Charge of the Light Brigade, The . . . 3440
 Charley, Charley, stole the barley . . . 2335
Chaucer, Geoffrey. Selections :
English poet (1340-1400)
 And as for me though I ken but
 lite (Legend of Good Women) . . . 366
 And then at erst he looked upon
 me (Canterbury Tales) . . . 366
 Befel it in that season on a day
 (Canterbury Tales) . . . 365
 Farewell, my sweet! Farewell, my
 Emelye! (Canterbury Tales) . . . 5806
 Full many a year in high prosper-
 ity (Canterbury Tales) . . . 5802
 Good man was there of religioun,
 A (Canterbury Tales) . . . 365
 Her yellow hair was braided in
 a tress (Canterbury Tales) . . . 5805
 In this world right now I knowe
 none (Canterbury Tales) . . . 5806
 Knight there was and that a
 worthy man, A (Canterbury
 Tales) . . . 365
 Look who that is most virtuous
 away (Canterbury Tales) . . . 5806
 "Right well, my lord," quoth
 she (Canterbury Tales) . . . 5802
 There was also a nun, a Prioress
 (Canterbury Tales) . . . 365
 When that Aprille with his
 showres soot (Canterbury
 Tales) . . . 364
 With him there was his son, a
 young Squier (Canterbury
 Tales) . . . 365
 Cherry-Ripe . . . 6767
Chesterton, G. K.
English poet and critic (1874-1936)
 Donkey, The . . . 6887
 Chide me not, laborious band . . . 5663
 Chieftain to the Highlands bound . . . 1466
 Child and the Snake, The . . . 3330
 Child, do not throw this book
 about! . . . 4802
 Child's Evening Prayer, A . . . 2208
 Child's Thought of God, A . . . 731
 Children's Hour, The . . . 4573
 Children's Song, The . . . 2087
 Choir Invisible, The . . . 4184
 Choosing a Name . . . 3702
 Chorus from Atalanta in Calydon . . . 5914
 Chorus of the Pines, The . . . 6891
 Christians Awake! . . . 5043
 Christmas Hymn, A . . . 1597

- Christmas is coming, the geese are
getting fat 4188
- Christmas Morning 3935
- Churchyard In the Wold, The . . 1720
- Cibber, Colley**
English dramatist and poet (1671-1757)
Blind Boy, The 1090
- City Mouse and Garden Mouse . . 7045
- Clap, clap hands 4935
- Clap hands, clap hands 6412
- Clare, John**
English peasant poet (1793-1864)
I am 6897
- Little Trotty Wagtail 5298
- Peasant Poet's Lament, A . . . 6633
- Claudius, Matthias**
German journalist (1740-1815)
We Plough the Fields, and
Scatter 6641
- Clear and cool, clear and cool . . 1464
- Clearlest voice in Britain's chorus,
Tusitala 6410
- Clock is on the stroke of six, The
Close his eyes; his work is done . . 5289
- Cloud, The 4567
- Clough, Arthur Hugh**
English poet (1819-1861)
Consider it again 357
- Green Fields of England, The . . 6287
- Say Not the Struggle Naught
Availeth 477
- Where Lies the Land? 5666
- Cobbler, cobbler, mend my shoe . 6412
- Cock doth crow, The 4808
- Cock is crowing, The 4799
- Cock Robin got up early . . . 7051
- Cock-a-doodle-doo 4063
- Cock's on the house-top blowing
his horn, The 4807
- Coleridge, Hartley**
English poet (1796-1849)
November 5668
- Song
Song of the Nightingale, A . . . 848
- There is an Awful Quiet in the Air 1092
- Coleridge, Samuel Taylor**
English metaphysical poet (1772-1834)
Answer to a Child's Question . . 1721
- Child's Evening Prayer, A . . . 2208
- Frost at Midnight 6284
- Kubla Khan 6645
- S. T. Coleridge Quotations :**
He prayeth best who loveth best
(The Ancient Mariner) 2474
- Horned moon, with one bright
star, The (The Ancient Mariner) 6227
- Moving Moon went up the sky,
The (The Ancient Mariner) . . 2473
- Coleridge, Sarah**
English author (1802-1852)
Months, The 6902
- Collins, William**
English poet (1721-1759)
How Sleep the Brave 847
- Come, all ye weary wanderers . . 3938
- Come Buy! Come Buy! (with
music) 5300
- Come, cuddle close in Daddy's
coat 5295
- Come, dear children, let us away . 351
- Come hither, lads, and hearken . . 5292
- Come into the Garden, Maud . . 3327
- Come, let us plant the apple tree . 603
- Come, let's to bed 231
- Come, live with me and be my
Love 2212
- Come, my little one, with me . . . 98
- Come, take up your hats, and
away let us haste 4806
- Come unto these yellow sands
(Shakespeare quoted) 1108
- Come when you're called 1840
- Coming of Spring, The 6892
- Company was gathered, The . . . 6407
- Conclusion, The 2460
- Congreve, Celia Lady**
English poet
Wood Fires 2209
- Consecration, A 6893
- Consider It Again 357
- Content 6407
- Contented John 2711
- Contentment 2460
- Cook, Eliza**
English author (1818-1889)
Fern and the Moss, The 2088
- King Bruce and the Spider . . . 1339
- Coolidge, Susan (S. C. Woolsey)**
American author (1835-1905)
How the Leaves Came Down . . 6038
- Cooper, George**
English poet (1820-1876)
Baby land 6288
- Corbet, Richard**
English bishop and poet (1582-1635)
Father's Blessing, A 6285
- Cornwall, Barry (B. W. Procter)**
English poet and critic (1787-1874)
Fate of the Oak, The 2086
- Horned Owl, The 1094
- On a Headland in Panama . . . 4439
- Sea, The 850
- Stars, The 357
- Stormy Petrel, The 1340
- Coronation 847
- Cory, William Johnson**
English schoolmaster (1823-1892)
Heraclitus 1721
- Cottage and Her Infant, The . . . 4686
- Council of Horses, The 849
- Countess of Pembroke, The . . . 3810
- Country and City 5293
- Country Faith, The 5045
- Country life is sweet, A 4803
- Courage, brother ! do not stumble . 966
- Cowards die many times before
their deaths (Shakespeare) . . 6292
- Cowley, Abraham**
English poet and essayist (1618-1667)
Wish, The 6283
- Cowper, William**
English poet (1731-1800)
Alexander Selkirk 1721
- Boadicea 968
- Dispute between Nose and Eyes . 3816
- Epitaph on a Hare 4065
- Faithful Bird, The 2206
- God Moves in a Mysterious Way . 5419
- John Gilpin 5909
- Loss of the Royal George, The . . 2709
- Nightingale and the Glow-worm . 847
- Retired Cat, The 2711
- Slavery and War 2583
- Winter Evening, A 5177
- Crabbed age and youth (Shake-
speare quoted) 6535
- Cradle Song, A 851
- Creech into thy narrow bed . . . 5913
- Crewe, Marquess of**
English statesman (1858-1945)
Seven Years 5048
- Crisis, The 5543
- Crocus, The 3565
- Cromwell, our chief of men, who
through a cloud 2960
- Cross path 1840
- Crosses and troubles a many have
proved me 5046
- Crossing the Bar 3338
- Crouched on the pavement close
by Belgrave Square 6405
- Crowning of Dreaming John, The . 7037
- Cry of the Children, The 475
- Cry of the Dreamer, The 5044
- Cuckoo, cuckoo, cherry tree . . . 6779
- Cuckoo in the Pear Tree 6903
- Cuckoo Song 6895
- Cuddle Doon 3081
- Cunningham, Allan**
Scottish poet (1784-1842)
At Sea 1597
- Curfew Bell, The 6643
- Curfew tolls the knell of parting
day, The 6147
- Curly Locks ! Curly Locks ! wilt
thou be mine ? 7051
- Current that with gentle murmur
glides (Shakespeare quoted) . . 980
- Cut your nails on Monday 6654
- Daffodils, The** 6887
- Daffy-down-dilly has come to town . 852
- Dainty little maiden, A (with
music) 4443
- Daisy at Christmas, A 2336
- Dame, Get Up and Bake Your
Pie (with music) 3571
- Dame Trot and her cat 232
- Dance, little baby, dance up high . 231
- Dance to your daddie 102
- Danube to the Severn gave, The
(Tennyson quoted) 6910
- Dapple Grey 3441
- Darby and Joan 2214
- Dark house, by which once more
I stand (Tennyson quoted) . . 6909
- David, King of Israel**
Lament for Saul and Jonathan
(quotation) 614
- Davidson, John**
Scottish poet and dramatist (1857-1909)
Piper Play 5174
- Davies, W. H.**
English poet and author (1870-1940)
Leisure 6768
- Davis, Thomas**
Irish poet and politician (1814-1845)
My Land 6158
- Day is coming, The 5292
- Day is done, The 4803
- Day of Days, The 2708
- Day of the Lord is at hand, The . 3446
- Day Thou Gavest, The 6524
- Day will dawn when one of us
shall hearken, The 5291
- Daybreak 3942
- Days are cold, the nights are long . 4686
- Days Gone By, The 6900
- Days That Are No More, The . . 5046
- De La Mare, Walter**
English poet (born 1872)
Buckle, The 4574
- Sleeping Beauty, The 5663
- Dear Becher, you tell me to mix
with mankind (Byron quoted) . 2596
- Dear harp of my country, in dark-
ness I found thee 4316
- Dear is my little native vale . . . 4573
- Dear Land of Hope, thy hope is
crowned 98
- Dear Lord ! kind Lord ! 6639
- Death 1955
- Death, be not proud, though some
have called thee 1955
- Death of the Old Year, The . . . 3939
- Death stands above me, whisper-
ing low 4182
- Death the Victor 5419
- December 31, 1933 1717
- December's Snow 5667
- Deed and a Word, A 2709
- Defence of Lucknow, The 4797
- Dekker, Thomas**
English dramatist and poet (1570-1641)
Sweet Content 5173
- Dennys, Richard Molesworth**
English poet (1889-1916)
Boy's Thanksgiving, A 3445
- Deserted House, The 3327
- Destruction of Sennacherib . . . 2958
- Diamond Dust 5662
- Dibdin, Charles**
English writer of sea songs (1745-1814)
Before Battle 1092
- Tom Bowling 731
- Dickens, Charles**
English novelist (1812-1870)
Ivy Green, The 967
- Dickens in Camp 4315
- Dickinson, Emily**
American poet (1830-1886)
Fringed Gentian 2710
- Railway Train, The 3566
- Diddle, diddle, dumpling, my son
John 4572
- Didn't know Flynn 1346
- Difference, The 6901
- Diller a dollar, A 1964
- Ding Dong Bell : Pussy's in the
Well (with music) 1960
- Dip down upon the northern
shore (Tennyson quoted) . . . 6912
- Dirge for a Soldier 5289
- Dispute between Nose and Eyes . 3816
- Ditty, A 4680
- Do ye hear the children weeping . 475
- Do you know what the birds say ? 1721
- Do you wish the world were
better ? 851
- Dobbin has a little friend 1723
- Dobson, Henry Austin**
English poet and essayist (1840-1921)
In After Days 5176
- Doctor Faustus was a Good Man
(with music) 4571

Doctor Foster went to Gloster ..	1840	Eagle, The ..	3329	Faith ..	6771
Dodge, Mary Mapes ..		Earth and Man, The ..	6893	Faithful Bird, The ..	2206
<i>American author and editor (1838-1905)</i>		Earth could not answer ; nor the		Faithless Sally Brown ..	7045
Billy Boy ..	1599	Seas that mourn (Omar ..		Farewell (J. A. Symonds) ..	6891
Dobbin's Friend ..	1723	Khayyam quoted) ..	5676	Farewell (George Wither) ..	3697
Good Little Girls, The ..	1599	Earth has not anything to show		Farewell, A (Charles Kingsley) ..	1598
Little White Feathers ..	1599	more fair ..	3201	Farewell, A (Tennyson) ..	7035
One and One ..	1599	Earth is the Lord's, and the		Farewell, a long farewell, to all	
Terrible Ball, The ..	4686	fulness thereof (Psalm 24) ..	2229	my greatness (Shakespeare	
Three Old Ladies, The ..	1599	Earthly Glory ..	5419	quoted) ..	6531
Willie's Lodger ..	100	Earthly Paradise, The ..	3082	Farewell, my sweet ! Farewell,	
Does the road wind up-hill all the		Echoing Green, The ..	1838	my Emily! (Chaucer quoted) ..	5806
way ? ..	1839	Efsoons they heard a most		Farewell, sweet groves, to you ..	3697
Dog will come when he is called ..	4444	melodious sound (Spenser		Farewell to the land where the	
Domett, Alfred ..		quoted) ..	742	gloom of my glory ..	7043
<i>New Zealand statesman (1811-1887)</i>		Eight fingers, ten toes ..	6901	Farewell to you—and you—and	
Christmas Hymn, A ..	1597	Elegy in a Country Churchyard ..	6147	you, Voluminus (Shakespeare	
Donkey, The ..	6887	Elegy on the Death of a Mad Dog ..	3812	quoted) ..	1102, 6293
Donne, John ..		Eleven men of England ..	5549	Farmer went trotting upon his	
<i>English clergyman and poet (1573-1631)</i>		Elihu ..	1089	grey mare, A ..	3080
Death ..	1955	Eliot, George (Mary A. Cross)		Farmer's Boy, The ..	1957
Doodle, doodle, doo ..	7051	<i>English novelist (1819-1880)</i>		Farmer's dog leaped over the stile ..	7051
Doubting Heart, A ..	4930	Choir Invisible, The ..	4184	Farrar, Frederic William ..	
Doudney, Sarah ..		Elixir, The ..	2086	<i>English clergyman (1831-1903)</i>	
<i>English poet and writer (1843-1926)</i>		Elizabeth, Elspeth, Betsy, and Bess ..	6779	In the Field 'with their Flocks	
Lesson of the Water Mill, The ..	2710	Ellerton, John ..		Abiding ..	3939
Things That Never Die ..	4804	<i>English clergyman and author (died 1893)</i>		Fate of the Oak, The ..	2086
Douglas, William ..		Day Thou Gavest, The ..	6524	Father is Coming ..	4066
<i>of Fingland, 18th-century Scottish writer</i>		Elliott, Ebenezer ..		Father William ..	6150
Annie Laurie ..	477	<i>English corn law rhymist (1781-1849)</i>		Father's Blessing, A ..	6285
Dove and the Wren, The ..	6903	People's Anthem, The ..	1340	Fatherland, The ..	4183
Dove says, Coo, coo ..	6903	Emerson, Ralph Waldo ..		Fear death?—to feel the fog in	
Down from yon distant mountain		<i>American poet and essayist. (1803-1882)</i>		my throat ..	967
height ..	1956	Chide Me Not ..	5663	Fear no more the heat o' the sun	
Down in a green and shady bed ..	2214	Duty and Power ..	967	(Shakespeare quoted) ..	1108
Doyle, Sir Arthur Conan ..		Good-bye ..	1464	Fern and the Moss, The ..	2088
<i>British novelist and poet (1859-1930)</i>		Mountain and the Squirrel, The ..	1597	Fiddle-De-Dee (with music) ..	4933
December's Snow ..	5667	Nation's strength ..	2208	Fiddle-Dee-Dee ..	6902
Parable, A ..	5549	Test, The ..	730	Fie, fie, faint-hear ed Knight	
Song of the Bow, The ..	477	Enchanted Shirt, The ..	1463	(Spenser quoted) ..	5920
To Carlo ..	5042	End is never afar, The ..	6149	Field, Eugene ..	
Doyle, Sir Francis Hastings ..		End is the Best of All, The ..	5046	<i>American author (1850-1895)</i>	
<i>English poet (1810-1888)</i>		End of Life, The ..	352	Fiddle-Dee-Dee ..	6902
Red Thread of Honour, The ..	5549	Enforced to seek some shelter nigh		Fly-Away Horse, The ..	1095
Drake he's in his hammock an' a		at hand (Spenser quoted) ..	5919	Gold and Love for Dearie ..	4683
thousand miles away ..	6891	England and America in 1782 ..	6888	Good-Children Street ..	851
Drake's Drum ..	6891	England gave me sun and storm ..	7036	Humming-top, The ..	850
Drayton, Michael ..		England, My England ..	5667	Inscription on a Silver Plate ..	967
<i>English poet (1563-1631)</i>		England's Dead ..	6157	Little Blue Pigeon ..	4682
Arming of Pigwigen, The ..	1466	Envoy ..	604	Little Boy Blue ..	6894
Ballad of Agincourt, The ..	965	Epilogue (to Asolando) ..	4801	Long Ago ..	2709
Immortality in Song ..	5172	Epitaph on a Hare ..	4065	My Little Googly-Goo ..	4681
Dream of Eugene Aram, The ..	6401	Ere on my bed my limbs I lay ..	2208	Our Babe Walks in his Garden ..	4684
Dribble, dribble, trickle, trickle ..	5545	Essay on Criticism (Pope quoted) ..	1612	Pittypat and Tippytoe ..	1090
Drink to me only with thine eyes ..	6410	Eternal Father, strong to save ..	3565	Poet and King ..	3700
Drinkwater, John ..		Eternal Ruler of the Ceaseless		Rock-a-by Lady, The ..	6895
<i>English poet and dramatist (1882-1937)</i>		Round ..	846	Shuffle-Shoon and Amber-	
Crowning of Dreaming John, The ..	7037	Ethereal minstrel ! pilgrim of the		Locks ..	6772
Vagabond, The ..	6404	sky ..	6150	Shut-Eye Train, The ..	98
Drummond, William ..		Eve of Saint Mark, The ..	6406	Sleep, Little One, Sleep ..	4683
<i>Scottish poet (1585-1649)</i>		Even such is time, that takes in		So, So, Rock-a-by So ..	4682
Run, Shepherds, Run ..	3935	trust ..	2460	Song of Little-Oh-Deer, The ..	4684
This Life Which Seems so Fair ..	3699	Evening (Milton quoted) ..	1358	Teeny-Weeny ..	2207
Dryden, John ..		Evening Hymn, An ..	357	Wynten, Blynken, and Nod ..	6772
<i>English poet and dramatist (1631-1700)</i>		Evening red and morning grey ..	5800	Field Path, The ..	5047
Three Poets, The ..	1596	Ever let the Fancy roam ..	4313	Fields, James Thomas ..	
Dryden Quotations : ..		Every evening, after tea ..	2207	<i>American publisher (1817-1881)</i>	
His grandeur he derived from		Every evening baby goes ..	5298	Captain's Daughter, The ..	5298
Heaven alone (on Cromwell) ..	1610	Every lady in this land ..	6904	Owl Critic, The ..	4317
What passion cannot music raise		Excelsior ..	1598	Finis ..	1956
and quell ? (Song in praise of		Exile's Song, The ..	6153	Fire-mist and a planet, A ..	3445
Music) ..	1610	Extremes ..	4317	Fires of death, The (Byron quoted) ..	2596
Duck and a drake, A ..	4188	Exultations, agonies, And love		First day God created light, The ..	248
Dufferin, Lady ..		(Wordsworth quoted) ..	1107	First Nowell, The ..	5043
<i>Irish song writer (1807-1867)</i>		Eyes and No Eyes ..	6901	First the farmer sows his seeds ..	7051
Lament of the Irish Emigrant ..	5913	Eyes, look your last ! (Shake-		FitzGerald, Edward ..	
Du Maurier, George ..		speare quoted) ..	6162	<i>English poet and translator (1809-1883)</i>	
<i>British artist and writer (1834-1896)</i>		Faintly as tolls the evening chime	3569	His version of Omar Khayyam's	
Little Life, A ..	6895	Fair Aigues' son, only to gods in		Rubaiyat quoted ..	5676
Duncan, Mary Lundie ..		heaven (Sophocles quoted) ..	5185	Five little pussy-cats ..	2832
<i>Author of Rhymes for My Children (died</i>		Fair Daffodils ..	6771	Five years have past: five sum-	
1840) ..		Fair little girl sat under a tree, A ..	2459	mers, with the length ..	6631
Jesus, Tender Shepherd ..	1723	Fair maid who the First of May ..	5296	Flag Goes By, The ..	604
Duncan is in his grave (Shakespeare		Fair pledges of a fruitful tree ..	6894	Fleet Street ..	5794
quoted) ..	6168	Fair ship, that from the Italian		Flight of the Arrow, The ..	3812
Duty and Power ..	967	shore (Tennyson quoted) ..	6910	Flight of Youth, The ..	4184
Dyer, Sir Edward ..		Fair stood the wind for France ..	965	Flock of sheep that leisurely pass	2458
<i>English poet and courtier (died 1607)</i>		Fairest action of our human life ..	731	Florence Nightingale ..	6635
Contentment ..	2460	Fairies, The ..	732	Flow down, cold rivulet, to the sea	7035
Dyke, Henry Van : see Van Dyke ..		Fairies of Caldon-Low, The ..	6642	Flower in the Crannied Wall ..	3326
Each eye Earth falleth down the		Fairy Folk, The ..	5295	Flowers, The ..	5422
dark ..	2708	Fairy Song ..	1839	Flowers of Thy heart, O God, are	
Each in His Own Tongue ..	3445	Fais Dodo, Colas ..	7041	they (Ebenezer Elliott quoted) ..	3956
				Fly-Away Horse, The ..	1095

- Flynn of Virginia, ... 1346
 Foiled by our fellow-men, de-
 pressed, outworn (Matthew
 Arnold quoted) 4088
- Follen, Eliza Lee**
American author (1787-1860)
 Oh, Look at the Moon 1723
 Fool's Prayer, The 1716
 Foot Soldiers 6288
 For a while a youth is lost in
 soaring thought 90
 For all your days prepare 5796
 For every evil under the sun 1840
 For I also had my hour (G. K.
 Chesterton quoted) 1900
 For I dipt into the future, far as
 human eye could see 3329
 For I have learned to look on
 Nature (Wordsworth quoted) 2472
 For the Fallen 7042
 For Those Who Fail 4804
 For want of the nail the shoe was
 lost 6904
 For we were nursed upon the self-
 same hill (Milton quoted) 1234
 Forsaken Merman, The 351
 For you I have been absent in the
 spring (Shakespeare quoted) 6416
- Foster, Stephen Collins**
American song writer (1826-1864)
 Massa's in de Cold, Cold Ground 5791
 Old Folks At Home 4440
 Found in the garden, dead in his
 beauty 1226
 Fountain, The 6150
 Four-and-twenty tailors wen to
 kill a snail 6904
 Four ducks on a pond 5422
 Four seasons fill the measure of
 the year 5173
 Fragment of a rainbow bright, A 1596
- France, Nursery Rhymes of**
 Au Clair de la Lune (with music) 4441
 Au Temps Jadis 734
 Fais Dodo, Colas 7041
 Il Était une Bergère (with music) 4443
 La Bonne Aventure (with music) 4441
 La Boulangère (with music) 4443
 La Mère Michel 7041
 Polichinelle (with music) 4442
 Ramène tes Moutons 7041
 Sur le Pont d'Avignon 7041
 Freedom 7033
 Freedom of the Mind 1094
 Fresh with all airs of woodland
 brooks 5047
 Friend should bear his friend's
 infirmities, A (Shakespeare
 quoted) 6536
 Friends, No-man kills me (Homer
 quoted) 5306
 Friends, Romans, countrymen,
 lend me your ears (Shake-
 speare quoted) 6292
 Fringed Gentian 2710
 Frisky as a lambkin 7045
 Frog He Would A-Wooing Go, A
 (with music) 3202
 From breakfast on all through the
 day 5792
 From the desert I come to thee 4189
 Frost at Midnight 6284
 Frost Looked Forth, The 7046
 Frost performs its secret ministry
 Full fathom five thy father lies
 (Shakespeare quoted) 1108
 Full knee-deep lies the winter snow
 Full many a glorious morning have
 I seen (Shakespeare quoted) 6414
 Full many a year in high prosper-
 ity (Chaucer quoted) 5802
 Full Sea Rolls, The 4804
 Funny Little Fellow, The 6160
- Gale, Norman**
English poet and story-teller (1862-1942)
 Bartholomew 6160
 Country Faith, The 5045
 Garden by the Sea, A 3701
 Garden is a lovesome thing, A 98
- Garrison, William Lloyd**
American abolitionist (1805-1879)
 Freedom of the Mind 1094
 Gather Ye Rosebuds While Ye
 May 1722
- Gay, John**
English poet and dramatist (1685-1732)
 Butterfly and the Snail, The 3697
 Council of Horses, The 849
 Gay go up, and gay go down 6654
 Gay Robin is seen no more 4800
 Gentle Jesus, Meek and Mild 733
 Georgie Porgie, Pudding and Pie 6904
 Gift, The 5291
- Gilder, Richard Watson**
American poet and editor (1844-1909)
 Great Nature is an Army Gay 1345
- Giffillan, Robert**
Scottish poet (1798-1850)
 Exile's Song, The 6153
- Gilman, Charlotte Perkins**
American poet and lecturer (1860-1935)
 Similar Cases 1954
 Ginevra 3075
 Girl Describes her Fawn, The 3566
 Girl in the lane that couldn't
 speak plain, The 6904
 Girls and boys come out to play
 (with music) 353
- Gisborne, Thomas**
English preacher (1758-1846)
 Worm, The 100
 Give a Man a Horse he can Ride 1716
 Give me your ear, good children
 all 4686
 Give thy thoughts no tongue
 (Shakespeare quoted) 1102, 6531
 Glories of our blood and state 5419
 Glorious company, the flower of
 men, A (Tennyson quoted) 5495
 Glory to Thee, My God, this Night
 Go to bed first 230
 Go Where Glory Waits Thee 3697
 God be in my head 2584
 God Bless our Native Land 3445
 God give us men. A time like
 this demands 2206
 God is our refuge and strength, a
 very present help in trouble
 (Psalm 46) 2230
 God made a little gentian 2710
 God Moves in a Mysterious Way 5419
 God of Nations, at Thy feet 5174
 God of our fathers, known of old 4680
 God Rest You Merry, Gentlemen 3938
 God Save the King 6889
 God Sends Love to You 1340
 God who created me 6283
 God's Fool 5797
 God's gifts so many a pleasure
 bring 3445
 Going to Paradise with the Asses 3811
 Gold and Love for Dearie 4683
- Goldsmith, Oliver**
Irish poet and novelist (1728-1774)
 Elegy on the Death of a Mad
 Dog 3812
 Good King Wenceslas 3932
 Good little boys should never say
 Good Little Girls, The 1599
 Good man was there of religion,
 A (Chaucer quoted) 365
 Good name in man and woman,
 dear my lord (Shakespeare
 quoted) 6536
 Good people all, of every sort 3812
 Good reader, if you e'er have seen
 Good sword and a trusty hand, A 2584
 Good-bye 1464
 Good-bye, good-bye to summer! 846
 Good-bye, proud world! I'm
 going home 1464
 Good-Children Street 851
 Good morrow, Hubert (Shake-
 speare quoted) 6529
 Good-morrow to you, Valentine! 6904
 Good-night (Jane Taylor) 1467
 Good-night and Good-morning 2459
 Good-night, Good-night 732
 Goosey Goosey Gander (with
 music) 229
- Gosse, Sir Edmund**
English poet and critic (1849-1928)
 Apologia 6286
 Blake 5550
 Charcoal-Burner, The 6152
 Little Mistress Mine 6777
 Song for the New Year, A 5665
 To Tusitala in Valima 6410
- With a Copy of Herrick 5047
 Gossips of the village—see, The 852
- Gould, Gerald**
English poet and journalist (1885-1936)
 Happy Tree, The 1090
- Gould, Hannah Flagg**
American poet (1789-1865)
 Frost Looked Forth, The 7046
 Name in the Sand, A 2206
 Graceful Story of Life, A 1094
- Graham, James : see Montrose**
- Grammar in Rhyme** 5800
 Grandmother's Tale, The 97
 Grave old clock on the mantel-
 piece, The 5545
 Graves of a Household, The 2213
- Gray, Thomas**
English poet (1716-1771)
 Elegy Written in a Country
 Churchyard 6147
 Great A, little A 4572
 Great A, little A, bouncing B 6411
 Great Fun (with music) 4441
 Great Glamis! worthy Cawdor!
 (Shakespeare quoted) 6168
 Great Heart 5177
 Great Nature is an army gay 1345
 Great, wide, beautiful, wonderful
 world 1839
 Greedy Boy, The 2711
 Green Fields of England, The 6287
 Green Gardens in Laventie! 6644
- Greene, Albert Gorton**
American lawyer and poet (1802-1868)
 Baron's Last Banquet, The 2505
- Greene, Robert**
English dramatist and poet (1560-1592)
 Content 6407
 Greenhouse is my summer seat 2206
 Greensleeves was all my joy 6404
- Greville, Sir Fulke**
English poet (1554-1628)
 On Sir Philip Sidney 729
- Had I but plenty of money, money
 enough and to spare 3438
 Had you seen these roads before
 they were made 2157
 Hail, beauteous stranger of the
 grove! 968
 Hail, holy Light, offspring of
 Heaven first born! (Milton
 quoted) 1358
 Hail thou, my native soil! thou
 blessed plot 5663
 Hail to thee, blithe spirit! 6281
 Half a league, half a league 3440
 Hamelin Town's in Brunwick 6027
 Handy Pandey, Jack-a-Dandy 102
 Hannah Pantry, in the pantry 6412
 Happiest Age, The 6634
 Happy the man whose wish and
 care 3701
 Happy Tree, The 1090
 Happy violets hiding from the
 roads (E. B. Browning quoted) 3457
- Hardy, Thomas**
English novelist and poet (1840-1927)
 Afterwards 6769
 Beyond the Last Lamp 6771
 Chorus of the Pities, The 6891
 In Time of the Breaking of
 Nations 6770
 They Come, Beset by Riddling
 Hail 6636
 Harp of the Mountain Land 5795
 Harp that once through Tara's
 Halls, The 3811
- Harrow, A.**
 Little Narrow Lane 1722
 Hart he loves the high wood, The 6904
- Harte, Francis Bret**
American humorist (1839-1902)
 Dickens in Camp 4315
 Flynn of Virginia 1346
- Hartwick, Rose**
American author (1850-1939)
 Curfew Bell, The 6643
 Hats Off 604
 Have pity, Lord; we humbly cry 5420
- Hawker, Robert Stephen**
English clergyman and poet (1803-1875)
 And shall Trejawnny die? 2584

Hay, John

- American statesman (1838-1905)*
 Enchanted Shirt, The . . . 1463
 He above the rest in shape and
 gesture proudly eminent (Milton
 quoted) . . . 1357
 He came from the North, and his
 words were few . . . 5290
 He came to the desert of London
 town . . . 6888
 He clasps the crag with crooked
 hands . . . 3329
 He Comes in the Night . . . 3937
 He Did Us All Salvation Bring . . . 3936
 He doth bestride the narrow
 world (Shakespeare quoted) . . . 2874
 He drew a circle that shut me out
 He fills the world with his singing
 He is Not a Poet . . . 6405
 He lives within the hollow wood
 He ne'er had seen one earthly sight
 He nothing common did or mean
 (Andrew Marvell quoted) . . . 523
 He prayeth best who loveth best
 (S. T. Coleridge quoted) . . . 2474
 He quickly arms him for the field
 He spake; and to confirm his
 words (Milton quoted) . . . 1357
 He spoke of Burns: men rude and
 rough . . . 5178
 He that is down needs fear no fall
 He that loves a rosy cheek . . . 5420
 He that would thrive . . . 2832
 He walked in glory on the hills . . . 4065
 He was a rat, and she was a rat . . . 6411
 He who ascends to mountain-tops
 shall find . . . 6770
 Heap on more wood!—the wind
 is chill . . . 3934
 Hear the sledges with the bells . . . 2825
 Heart and Will . . . 5664
 Heart to Keep, A . . . 5791
 Hearts, like doors, will ope with
 ease . . . 4806
 Heather, The . . . 6887
 Heaven Keep My Girl For Me . . . 6038
 Heavens declare the glory of God . . . 615
 Heavens in London Town, The . . . 6157
 Hector in the Garden . . . 5421
 Hector Protector was dressed all
 in green . . . 7052
 Heights and Depths . . . 4065
- Hemans, Felicia**
English poet (1793-1835)
 Better Land, The . . . 3200
 Casabianca . . . 4190
 England's Dead . . . 6157
 Graves of a Household, The . . . 2213
 Harp of the Mountain Land . . . 5795
 Homes of England, The . . . 3812
 Pilgrim Fathers, The . . . 2212
- Henley, William Ernest**
English poet and critic (1849-1903)
 End is the Best of All, The . . . 5046
 England, My England . . . 5667
 Full Sea Rolls, The . . . 4804
 Out of the Night . . . 6286
 When You Are Old . . . 5551
 Henry Hudson's Last Voyage . . . 5287
 Henry was every morning fed . . . 3330
 Her arms across her breast she laid
 Her robe was full rich of red
 scarlet engrained (W. Lang-
 land quoted) . . . 4695
 Her yellow hair was braided in a
 tress (Chaucer quoted) . . . 5805
 Heraclitus . . . 1721
- Herbert, George**
English clergyman and poet (1833-1833)
 Elixir, The . . . 2086
 Virtue . . . 5419
 Here a Little Child I Stand . . . 6282
 Here, a sheer hulk, lies poor Tom
 Bowling . . . 731
 Here am I, little Jumping Joan . . . 232
 Here I come creeping, creeping
 everywhere . . . 227
 Here in a quiet and dusty room
 they lie . . . 5797
 Here in the country's heart . . . 5045
 Here lies our Sovereign Lord the
 King . . . 2460
 Here lies whom hound did ne'er
 pursue . . . 4065
 Here sits the Lord Mayor . . . 6412

- Here sounded words of dear old
 folk . . . 5047
 Here we go round a ginger ring . . . 230
 Here we go round the mulberry
 bush (with music) . . . 6037
 Here we go up, up, up . . . 230
 Here's a poor widow from Babylon
 Here's Sulkv Sue . . . 6904
 231
- Herrick, Robert**
English clergyman and poet (1591-1674)
 Blossoms . . . 1722
 Cherry-Ripe . . . 6894
 Christmas Morning . . . 6764
 Fair Daffodils . . . 3935
 Gather Ye Rosebuds While Ye
 May . . . 6771
 Here a Little Child I Stand . . . 1722
 His Pillar . . . 6282
 I Sing of Brooks . . . 7043
 Prayer of Robert Herrick, The . . . 6149
 Thanksgiving for His House, A . . . 3699
 To Anthea . . . 6647
 To Meadows . . . 1839
 To Robin Redbreast . . . 6892
 Triplets of Little . . . 6645
 6641
- Hervey, Thomas K.**
Scottish poet and journalist (1799-1859)
 I think on Thee . . . 6644
 Hey, Diddle Diddle . . . 2829
 Hey diddle, dinkety, poppety, pet . . . 6779
 Hey, my kitten, my kitten . . . 734
 Hey, Nonny! . . . 5798
- Heywood, Thomas**
English author (died 1650)
 Pack, Clouds, Away! . . . 5914
 Ye Little Birds that Sit and Sing . . . 6287
 Hick-a-more, hack-a-more . . . 791
 Hickory, Dickory, Dock (with
 music) . . . 6159
- Hickson, William Edward**
English educationist (1802-1870)
 God Bless our Native Land . . . 3445
 Try Again . . . 100
 Higgledy, Piggledy, here we lie . . . 4062
 Higgledy, Piggledy, my black hen . . . 230
 High diddle ding . . . 6412
 High walls and huge the body may
 confine . . . 1094
 High-brow house was furnished
 well . . . 5549
 Highland Mary . . . 5294
 Hills are shadows, and they flow . . . 517
- Hinds, Samuel**
English clergyman (1793-1872)
 Baby Sleeps . . . 7046
 His fame shall never pass away . . . 97
 His golden locks Time hath to
 silver turned (George Peele
 quoted) . . . 1928
 His grandeur he derived from
 Heaven alone (Dryden quoted) . . . 1610
 His Life was gentle; and the elements
 (Shakespeare quoted) . . . 240
 His Pillar . . . 7043
 Ho! for a frolic! . . . 6903
- Hodgson, Ralph**
English poet
 Bells of Heaven, The . . . 7035
 Stupidity Street . . . 849
 Time, You Old Gipsy Man . . . 2582
- Hodgson, William Noel**
English poet (died 1916)
 Before Action . . . 6771
- Hogg, James**
Scottish poet (1770-1835)
 Boy's Song . . . 2213
 Kilmeny . . . 5039
 Skylark, The . . . 5664
- Holland, J. G.**
American author (1819-1881)
 True Men . . . 2206
 Hollow winds begin to blow The . . . 2960
- Holmes, Oliver Wendell**
American poet and essayist (1809-1894)
 Chambered Nautilus, The . . . 6155
 Last Leaf, The . . . 4183
 Lord Of All Being . . . 1094
 Two Armies, The . . . 5791
 Voiceless, The . . . 6777
 What the Stars Have Seen . . . 2583
 Home . . . 6648
 Home No More Home to Me . . . 6768
 Home, Sweet Home . . . 6892
 Home they brought her warrior
 dead . . . 3567

- Home Thoughts from Abroad . . . 2208
 Home Thoughts in Laventie . . . 6644
- Homer. Quotations:**
Greek epic poet (962-927 B.C.)
 Friends, No-man kills me
 (Odyssey) . . . 5306
 If no man hurt thee (Odyssey) . . . 5306
 No-man is my name (Odyssey) . . . 5306
 Perform, ye Trojans, what the
 rites require (Iliad) . . . 5304
 Homes of England, The . . . 3812
- Honeywood, St. John**
American poet (1763-1798)
 Darby and Joan . . . 2214
- Hood, Thomas**
English poet and humorist (1799-1845)
 Dream of Eugene Aram, The . . . 6401
 Faithless Sally Brown . . . 7045
 I Remember, I Remember . . . 2584
 It is Not Death . . . 5914
 November in England . . . 1345
 Queen Mab . . . 730
 Ruth . . . 1954
 Song of the Shirt, The . . . 1837
 Tom Woodgate . . . 1595
- Horne, Richard Hengist**
English traveller and poet (1803-1884)
 Plough, The . . . 2582
 Horned moon, with one bright
 Star (S. T. Coleridge quoted) . . . 6227
 Horned Owl, The . . . 1094
 Hot cross buns . . . 4572
- Houghton, Lord**
English poet and politician (1809-1885)
 Good-night and Good-morning . . . 2459
 I Wandered by the Brookside . . . 4440
 Men of Old! The . . . 2957
 House of Life is Yours, My Dear . . . 4439
 House of Memories, The . . . 5176
- How, W. Walsham**
English bishop (1823-1897)
 Thy People, Lord, Are We . . . 3813
 How beautiful is the rain . . . 3570
 How blest is he though ever
 crossed . . . 1720
 How do I love thee? Let me
 count the ways (E. B. Brown-
 ing quoted) . . . 3457
 How does my lady's garden
 grow? (with music) . . . 1341
 How does the water come down
 at Lodore? . . . 3698
 How Every Wise Child Should
 Live . . . 474
 How far that little candle throws
 his beams (Shakespeare
 quoted) . . . 6536
 How happy is he born and taught
 How Horatius Kept the Bridge . . . 4803
 6883
 How Lang and Dreary is the
 Night . . . 7034
 How like an angel came I down . . . 2210
 How lovely is the sound of oars
 at night . . . 5663
 How many miles to Babylon? . . . 1344
 How many paltry, foolish, painted
 things . . . 5172
 How many pounds does the baby
 weigh? . . . 6160
 How many thousand of my
 poorest subjects (Shakespeare
 quoted) . . . 6535
 How oft the sight of means to do
 ill deeds (Shakespeare quoted) . . . 6536
 How steep the brave who sink to
 rest . . . 847
 How sweet is the shepherd's sweet
 lot . . . 7046
 How sweet the moonlight sleeps
 upon this bank (Shakespeare
 quoted) . . . 982
 How the Leaves Came Down . . . 6038
 How they Brought the Good
 News from Ghent . . . 3437
 How would Willie like to go . . . 3204
- Howe, Julia Ward**
American author (1819-1910)
 Battle-Hymn of the Republic . . . 4065
- Howitt, Mary**
English author (1799-1888)
 Fairies of Caddon-Low, The . . . 6642
 Father is Coming . . . 4065
 Old Christmas . . . 1956
 Spider and the Fly, The . . . 1467
 Voice of Spring, The . . . 4574

Hugo, Victor Marie	I like to see it lap the miles . . .	3566	If no one ever marries me . . .	479
<i>French poet and novelist (1802-1885)</i>	I live for those who love me . . .	227	If one should bring me this report	
Stream and the Ocean, The . . .	I live once more to see the day . . .	5291	(Tennyson quoted) . . .	6910
Human Seasons, The . . .	I'll introduce—just wait awhile . . .	7041	If one should give me a heart to	
Humming-top, The . . .	I'll sing you a song . . .	1724	keep . . .	5791
Humpty Dumpty sat on a wall . . .	I'll tell you a story . . .	971	If the butterfly courted the bee . . .	3572
Hunt, Leigh	I'll tell you how the leaves came		If the evening's red and the morn-	
<i>English essayist and poet (1784-1859)</i>	down . . .	6038	ing's grey . . .	971
About Ben Adhem and the Angel . . .	I love little pussy . . .	356	If the old woman who lived in a	
Jenny Kissed Me . . .	I'm pensioned—well . . .	1720	shoe . . .	608
Hunting Song . . .	I'm sittin' on the 'stille, Mary . . .	5913	If thou should'st ever come by	
Hush, baby, my dolly . . .	I'm truly sorry man's dominion		choice or chance . . .	3075
Hushaby, babby, lie still with thy	(Burns quoted) . . .	2224	If wishes were horses . . .	1840
daddy . . .	I'm very glad the spring is come	6156	If you are to be a gentleman . . .	852
Hush-a-by Baby on the Tree	I'm wearin' awa', Jean . . .	4930	If you can keep your head when all	
Top (with music) . . .	I met a traveller from an antique		about you . . .	6285
Hush-a-bye, baby . . .	land . . .	4932	If you cannot on the ocean . . .	4931
Hush-a-bye, Colin . . .	I Must Not Tease My Mother . . .	733	Ignorance is the curse of God	
Hushed was the evening hymn . . .	I must not throw upon the floor	1600	(Shakespeare quoted) . . .	2974
I Am . . .	I never saw a purple cow . . .	356	Ike Walton's Prayer . . .	6638
I am chubby and I'm small (with	I never see the newsboys run . . .	5794	Il Etait une Bergère (with music) . . .	4443
music) . . .	I often sit and wish that I . . .	852	Imbued with the seraphic fire . . .	1719
I am monarch of all I survey . . .	I once knew all the birds that		Immortality in Song . . .	5172
I am never merry when I hear	came . . .	2709	In a cottage in Fife . . .	4062
sweet music (Shakespeare	I pass beside the reverend walls		In a crack near a cupboard, with	
quoted) . . .	(Tennyson quoted) . . .	6913	dainties provided . . .	2338
I am tired of planning and toiling	I played with you mid cowslip		In a Devon Valley . . .	1717
I am I yet what I am who cares,	blowing . . .	2209	In a Garden . . .	4190
or knows? . . .	I Remember, I Remember . . .	2584	In a world of life they live (Words-	
I bring fresh showers for the	I Richard's body have interred		worth quoted) . . .	3958
thirsting flowers . . .	anew (Shakespeare quoted) . . .	5873	In After Days . . .	5176
I cannot do the big things . . .	I said to Life, How comes it . . .	5291	In April . . .	4808
I care not, Fortune, what you me	I saw a ship a-sailing (with music) . . .	101	In Donegal . . .	1718
deny (James Thomson quoted) . . .	I saw a sower walking slow . . .	3200	In dreams the exile cometh home	2828
I come from haunts of coot and	I saw Eternity the other night . . .	3082	In Flanders fields the poppies blow	2209
hern . . .	I saw him once before . . .	4183	In either hand the hastening angel	
I count myself in nothing else so	I saw the Beauty of the World . . .	4573	caught (Milton quoted) . . .	1358
happy (Shakespeare quoted) . . .	I Saw Three Ships Come Sailing		In good King Charles's golden days	5176
I crave, dear Lord . . .	By (with music) . . .	5050	In his chamber, weak and dying . . .	5290
I'd a dream tonight . . .	I saw with open eyes . . .	849	In hope a King doth go to war	
I'd like to be a farmer . . .	I say to thee, do thou repeat . . .	5054	(quotation) . . .	2108
I dare do all that may become a	I shot an arrow into the air . . .	968	In London once I lost my way . . .	3444
man (Shakespeare quoted) . . .	I sing of brooks . . .	6149	In man's soul arise (Robert	
I do not like thee, Doctor Fell . . .	I, Sir Arthur, saw the Holy Grail		Browning quoted) . . .	4088
I do not want a puppy-dog . . .	(Tennyson quoted) . . .	3286	In Memoriam (selections) . . .	6909
I do think my tread (Francis	I sprang to the stirrup, and Joris, . . .		In Praise of a Countryman's Life	5551
Thompson quoted) . . .	I stood and watched . . .	3437	In Summer I am very glad . . .	478
I dreamed a dream next Tuesday	I Stood Tip-toe Upon a Hill . . .	6408	In tattered old slippers that toast	
week . . .	I strove with none, for none was	6283	at the bars . . .	3809
I dreamed one I had loved did me	worth my strife . . .	1956	In the Days of Long Ago . . .	734
foul wrong . . .	I suppose if all the children . . .	1226	In the Field with their Flocks	
I had a little boy, and his name	I think he had not heard of the		Abiding . . .	3939
was Blue Bell . . .	far towns . . .	5172	In the hollow tree in the old grey	
I Had a Little Doggy . . .	I think on Thee . . .	6644	tower . . .	1094
I had a little moppet . . .	I think that I shall never see . . .	6895	In the hour of my distress . . .	3699
I had a little nut-tree (with music) . . .	I Think When I Read . . .	6902	In the Making . . .	6149
I had a little pony . . .	I've a letter from thy sire . . .	4801	In the merry month of May . . .	2958
I had a silver buckle . . .	I've watched you now a full half-		In the Moonlight (with music) . . .	4441
I Had Four Brothers . . .	hour . . .	4568	In the Poppy Field . . .	4315
I had no thought of stormy sky . . .	I Wandered by the Brook-side . . .	4440	In this lone open glade I lie . . .	7034
I have a little hen . . .	I wandered far in the world . . .	1720	In this world right now I know	
I have a little husband . . .	I wandered lonely as a cloud . . .	6887	none (Chaucer quoted) . . .	5806
I have a little shadow that goes	I was mad to welcome him (Virgil		In Time of the Breaking of Nations	6770
in and out with me . . .	quoted) . . .	5556	In Xanadu did Kubla Khan . . .	6645
I have got a new-born sister . . .	I weep for Adonais—he is dead! . . .	6765	Incheape Rock, The . . .	6634
I have had playmates, I have had	I, who for years past count have		Incident in the French Camp . . .	1345
companions . . .	kept my name (Laberius		Industry of Animals, The . . .	1346
I have loved colours, and not	quoted) . . .	5427	Infant Joy . . .	6900
flowers . . .	I will arise and go now, and go to		Ingelow, Jean	
I have no name . . .	Innisfree . . .	6894	<i>English poet and writer (1820-1897)</i>	
I have not sinned against the God	I will bless the Lord at all times		Graceful Story of Life, A . . .	1094
of Love . . .	(Psalm 34) . . .	2230	Poet's Mission, The . . .	5795
I have seen you, little mouse . . .	I would live, if I had my will . . .	6158	Seven Times One . . .	1225
I hear a shout that moves the	I would not, if I could, be called a		Inscription on a Silver Plate . . .	967
Earth . . .	poet . . .	6405	Inside King's College Chapel . . .	6646
I hear thee speak of the better	If all the ships I have at sea . . .	6635	Into the skies one summer's day . . .	6777
land . . .	If all the world were apple pie . . .	6904	Into the sunshine . . .	6150
I hung my verses in the wind . . .	If all the year were playing holidays		Into the Woods my Master Went . . .	6404
I kissed thee ere I killed thee	(Shakespeare quoted) . . .	6536	Into the World and Out . . .	6901
(Shakespeare quoted) . . .	If bees stay at home . . .	1344	Into the world he looked with	
I knew him for a gentleman . . .	If Candlemas Day be bright and		sweet surprise . . .	6901
I know a bank whereon the wild	fair . . .	6779	Irish Harper, The . . .	5792
thyme blows (Shakespeare	If I Fall . . .	6888	Is it, then, regret for buried time	
quoted) . . .	If I had as much money as I could		(Tennyson quoted) . . .	6914
I know a child, and who she is . . .	spend . . .	5296	Is there a man whose judgment	
I Know a Face . . .	If I had money I'd buy a clown . . .	6779	clear (Burns quoted) . . .	2222
I know a funny little man . . .	If I Knew what Poets Know . . .	6640	Is there for honest poverty . . .	2826
I know a little garden-close . . .	If I should die, think only this of		Isolation of Genius, The . . .	6770
I know a purple moorland where	me . . .	228	It Came Upon the Midnight Clear . . .	5046
a blue loch lies . . .	If I want to be happy . . .	474	It fortifies my soul to know	
I know not that the men of old . . .	If I were King of France, that		(quotation) . . .	493
I know not whence I came . . .	noble fine land . . .	6887	It is a Beauteous Evening . . .	6645
I know that this was Life (Tenny-	If is and ans . . .	1724	It is Not Death . . .	5914
son quoted) . . .	If love were what the rose is . . .	6036	It is not growing like a tree . . .	2087
I know the pools where the gray	If no man hurt thee, but the Hand		It is not to be thought of that the	
ling rise . . .	Divine (Homer quoted) . . .	5306	flood . . .	6769

- It is the cause, it is the cause, my soul (Shakespeare quoted) . . . 1107
 It is the miller's daughter . . . 6156
 It little profits that an idle king 3325
 It seems the world was always bright . . . 7044
 It was a cove, a huge recess (Wordsworth quoted) . . . 464
 It was an hill placed in an open plain (Spenser quoted) . . . 5924
 It was a lover and his lass (Shakespeare quoted) : with music . . . 6650
 It was a summer evening . . . 3446
 It was many and many a year ago 6282
 It was roses, roses, all the way . . . 358
 It was that man who went again, alone (quotation) . . . 3006
 It was the calm and silent night 1597
 It was the schooner Hesperus . . . 5171
 It was the time when lilies blow 3814
 It Will End in the Right . . . 7035
 It's good to see the school we knew 4929
 Ivy Green, The . . . 967
- Jack and Jill went up the hill (with music) . . . 1093
 Jack and Joan, they think no ill 5293
 Jack Jingle went 'prentice . . . 1468
 Jack Sprat and His Wife . . . 6653
 Jack Sprat had a pig . . . 230
 Jackdaw of Rheims, The . . . 4927
- Jackson, Helen H.
American poet (1831-1885)
 Coronation . . . 847
 Jacobite's Epitaph, A . . . 4316
- Jammes, Francis
French rural poet (born 1868)
 Going to Paradise with the Asses 3811
 January brings the snow . . . 6902
 Je suis un petit poupon (music) 4441
- Jenner, Edward
English physician (1749-1823)
 Signs of Rain . . . 2960
 Jenny kissed me when we met . . . 1464
 Jenny Wren fell sick . . . 6412
 Jesu, Lover Of My Soul . . . 4685
 Jesus bids us shine . . . 1226
 Jesus, tender Shepherd, hear me . . . 1723
 Joan of Arc . . . 5664
- Job, Book of (Quotation)
 Where wast thou when I laid the foundations of the Earth ? . . . 615
 Jock of Hazeldean . . . 3813
 John Anderson, my jo John . . . 228
 John Cook he had a little grey mare 7052
 John Gilpin . . . 5909
- John of Fornsete
English monk (13th century)
 Cuckoo Song . . . 6895
 Johnny Shall Go to the Fair . . . 5052
 Johnny shall have a new bonnet 5052
 Johnny's Frolic . . . 6903
 Johnathan, David's Lament (quoted) 614
- Jones, Thomas S.
American poet (1882-1932)
 Sometimes . . . 5669
- Jones, Sir William
English Orientalist (1746-1794)
 So Live . . . 6285
- Jonson, Ben
English poet and dramatist (1573-1637)
 Countess of Pembroke, The . . . 3810
 Drink to me only with thine eyes 6410
 He Did Us All Salvation Bring 3936
 To Celia . . . 6410
 To the Memory of My Beloved Master, William Shakespeare 5794
 True Growth . . . 2087
 Joy of Life . . . 733
 Joy Passing By . . . 5292
 Judas Iscariot . . . 5796
 Julian Grenfell . . . 5663
- Keats, John
English poet (1795-1821)
 Autumn . . . 5550
 Eve of Saint Mark, The . . . 6406
 Fairy Song . . . 1839
 Human Seasons, The . . . 5173
 I Stood Tiptoe Upon a Hill 6283
 On Looking into Chapman's Homer . . . 6034
 Philomel . . . 3699
 Poetry of Earth is never Dead 5293
 Realm of Fancy, The . . . 4313
 Thing of Beauty, A . . . 6409
 To a Nightingale . . . 6154
 When I Have Fears . . . 3418
- Keble, John
English poet and preacher (1792-1866)
 Rainbow, The . . . 1596
 Keel Row . . . 7042
- Kemble, Fanny
English writer and actress (1809-1893)
 Faith . . . 6771
- Ken, Thomas
English bishop and poet (1637-1711)
 Glory to Thee, my God, this Night . . . 6890
- Kennet, Lord: See Young, Sir Hilton
- Kethe, William
Scottish minister and poet (died 1608)
 Old Hundredth . . . 5912
- Khayyam, Omar: See Omar Khayyam
- Kilkenny Cats, The . . . 7048
- Kilmeny . . . 5039
- Kilmer, Joyce
American poet (1886-1918)
 Trees . . . 6895
 Twelve-Forty-Five, The . . . 6889
 Kindness to Animals . . . 6038
- King, Harriet E.
English poet (died 1920)
 Crocus, The . . . 3565
 King and the Abbot, The . . . 6521
 King Baby on His Throne . . . 479
 King Bruce and the Spider . . . 1339
 King Bruce of Scotland flung himself down . . . 1339
 King of Clubs he often drubs, The 5297
 King of France went up the hill 1724
 King of Kings, The . . . 3935
 King Pippin built a fine new hall 1724
 King was on his throne, The . . . 1772
 King was sick. His cheek was red, The . . . 1463
 Kingdom of God, The . . . 5054
- Kingsley, Charles
English novelist and poet (1819-1875)
 Day of the Lord is at Hand, The 3446
 Farewell, A . . . 1598
 Hey, Nonny! . . . 5798
 Ode to the North-east Wind 6409
 River, The . . . 1464
 Sands of Dee, The . . . 730
 Three Fishers, The . . . 3701
 Ugly Princess, The . . . 2086
 World's Age, The . . . 5291
 Young and Old . . . 1955
- Kingsley, Henry
English novelist (1830-1876)
 Blackbird at the Gate, The . . . 4189
- Kipling, Rudyard
English novelist and poet (1865-1936)
 Children's Song, The . . . 2087
 If . . . 6285
 Recessional . . . 4680
 Tinker Out of Bedford, The . . . 3569
 Kiss when I wake in the morning, A . . . 4934
 Kitten and the Leaves, The . . . 3330
 Knight there was and that a worthy man (Chaucer quoted) 365
 Kraken, The . . . 4182
 Kubla Khan . . . 6645
- La Bonne Aventure (with music) 4441
 La Boulangère (with music) . . . 4443
 La Mère Michel . . . 7041
 La plus aimable à mon gré . . . 7041
- Laberius, Decimus
Roman dramatist (105-43 B.C.)
 I, who for years past count have kept my name (quotation) . . . 5427
 Lady Clare . . . 3814
 Ladybird, Fly! . . . 5800
 Ladybird, ladybird, fly away home 5296
 Laid in my quiet bed . . . 6634
 Laid out for dead, let thy last kindness be . . . 6645
 Lake Isle of Innisfree . . . 6894
- Lamb, Charles
English essayist and critic (1775-1834)
 Anger . . . 3204
 Choosing a Name . . . 3702
 Old Familiar Faces, The . . . 3813
- Lamb, Charles and Mary
 Child and the Snake, The . . . 3330
 Love, Death, and Reputation . . . 1465
 Lambs . . . 478
 Lament of the Irish Emigrant, The 5913
 Lamps now glitter down the street, The . . . 4802
 Land Dirge, A . . . 5662
- Land of Hope and Glory . . . 98
 Land of Nod, The . . . 5792
 Land of our birth, we pledge to thee . . . 2087
 Land o' the Leal, The . . . 4930
 Land of Thus-and-So, The . . . 3204
 Land That Freedom Chose, The 3326
- Landor, Walter Savage
English author and poet (1775-1864)
 Finis . . . 1956
 Late Leaves . . . 2584
 Not a Word of Fear . . . 4182
- Langland, William
English poet (1330-1400)
 Her robe was full rich of red scarlet engrained (Piers Plowman quoted) . . . 4695
- Langier, Sidney
American poet (1842-1881)
 Into the Woods my Master Went 6404
 Lark, A . . . 478
 Lark bird, lark bird, soaring high 478
 Lars Porsena of Clusium . . . 6883
 Last Leaf, The . . . 4183
 Last Man, The . . . 2085
 Last Rose of Summer, The . . . 4066
 Last Word, The . . . 5913
 Late Leaves . . . 2584
 Laugh on, fair Cousins, for to you 1717
 Laughing Brook, The . . . 3810
 Laughing Song, A . . . 358
 Lavender blue and rosemary green 7051
 Law the Lawyers Know About 6887
 Lawn as white as driven snow (with music) . . . 5300
 Lay of the Last Minstrel, The . . . 6896
 Le bon temps que c'était . . . 734
- Lead, Kindly Light (Newman quoted) . . . 1757
- Lear, Edward
English author and artist (1812-1888)
 They Went to Sea in a Sieve . . . 3572
 Leaves are falling ; so am I, The 2584
- Ledwidge, Francis
Irish poet (1891-1917)
 Spring . . . 4802
- Legaré, James Matthew
American poet (1823-1859)
 Ahab Mohammed . . . 5789
 Leisure . . . 6768
- Leslie, Shane
Irish author and poet (born 1885)
 Bog Love . . . 6778
 Fleet Street . . . 5794
 Lesson of the Water Mill . . . 2710
 Let her not look for love of mine hereafter (Catullus quoted) . . . 5428
 Let knowledge grow from more to more (Tennyson quoted) . . . 3118
 Let me but do my work from day to day . . . 6153
 Let me have men about me that are fat (Shakespeare quoted) 1101
 Let me not to the marriage of true minds (Shakespeare) . . . 6416
 Let me today do something that shall take . . . 4802
 Let Something Good be Said . . . 6640
 Let the great world spin for ever (Tennyson quoted) . . . 2752
 Let the thick curtain fall (Whittier quoted) . . . 6969
 Let Us With a Gladsome Mind 7036
 Letter, A . . . 5669
 Letty's Globe . . . 7046
 Life . . . 476
 Life and Thought have gone away 3327
 Life every man holds dear (Shakespeare quoted) . . . 6536
 Life ! I know not what thou art 476
 Life of Man, The . . . 3812
 Life on the Ocean Wave, A . . . 3811
 Light . . . 477
 Light of Other Days, The . . . 2336
 Light that never was on sea or land, The . . . 67
 Lights Out . . . 99
 Like as the waves make towards the pebbled shore (Shakespeare quoted) . . . 6415
- Lindsay, Lady Anne (Barnard)
Scottish ballad writer (1750-1825)
 Auld Robin Gray . . . 5552
 Lines Written in Kensington Gardens . . . 7034

- Linton, William James
English poet (1812-1898)
 Heart and Will 5664
 Lion and the Mouse, The 3816
 Lion and the Unicorn, The 5915
 Lion with the heat oppressed, A 3816
 Lisle, Rouget de: see Rouget de Lisle
 Listen, my children, and you shall hear 3695
 Listen to the water mill 2710
 Little Betty Blue 6779
 Little birds are singing, The 733
 Little Blacky-Tops (with music) 6776
 Little Blue Pigeon 4682
 Little Bobby Snooks was fond of his books 4062
 Little Bo-peep has Lost her Sheep (with music) 5423
 Little Boy Blue (Eugene Field) 6894
 Little Boy Blue, come blow up your horn 6904
 Little boy once played so loud, A 4317
 Little children, never give 6038
 Little cock sparrow sat on a green tree, A 7052
 Little Crooked Man, The 6907
 Little Drops of Water 3330
 Little fairy comes at night, A 6288
 Little Feet 3941
 Little Gentleman, The (Anon.) 6038
 Little Gentleman, The (Anon.) 3941
 Little Giffen 2582
 Little Jack Horner sat in a corner 1344 : with music 880
 Little kids you call us 2210
 Little Kingdom I Possess, A 100
 Little Lamb 476
 Little lamb, who made thee ? 476
 Little Life, A 6895
 Little lowly heritage it was, A (Spenser quoted) 5920
 Little maid, pretty maid, whither goest thou ? 4934
 Little Miss Muffet 4572
 Little Mistress Mine 6777
 Little Mouse, The 7048
 Little old man and I fell out, A 7051
 Little Polly Flinders 7051
 Little Prince Tatters has lost his cap 5298
 Little Raindrops 5672
 Little Robin Redbreast 6779
 Little Robin Redbreast sat upon a hurdle 734
 Little Robin Redbreast sat upon a tree 970
 Little saint best fits a little shrine 6641
 Little Sister, The 478
 Little Sophy by the Sea 2336
 Little Star, The 733
 Little Stream had lost its way, A 2709
 Little sun, a little rain, A 6893
 Little Tom Tucker 232
 Little Tommy Tittlemouse 852
 Little toy dog is covered with dust 6894
 Little Trotty Wagtail 5298
 Little western flower, A (Shakespeare quoted) 4544
 Little White Feathers 1599
 Little White Lily 3201
 Little work and little play, A 6895
 London Bridge is broken down (with music) 2334
 Long Ago 2709
 Long cloud edged with streaming gray, The 4802
 Longfellow, Henry Wadsworth
American poet (1807-1882)
 Arrow and the Song, The 968
 Arsenal at Springfield, The 2087
 Boy and the Brook, The 1956
 Builders, The 2827
 Building the Ship 2647
 Children's Hour, The 4573
 Day is Done, The 4803
 Daybreak 3942
 Excelsior 1598
 Florence Nightingale 6635
 Norman Baron, The 5290
 Old Clock on the Stairs, The 2581
 Psalm of Life, A 4932
 Rain in Summer 3570
 Ride of Paul Revere, The 3695
 Three Kings, The 3933
 Tide Rises, the Tide Falls, The 2459
 Village Blacksmith, The 4680
 Warden of the Cinque Ports, The 5669
 Windmill, The 3076
 Wreck of the Hesperus, The 5171
 Looby Light (with music) 2211
 Look at the baker's wife (music) 4443
 Look on who will in apathy 2708
 Look who that is most virtuous always (Chaucer quoted) 5806
 Look with thine ears (Shakespeare quoted) 244
 Lord is my light and my salvation, The (Psalm 27) 2230
 Lord is my shepherd ; I shall not want, The (Psalm 23) 2229
 Lord is my Shepherd, The (Stopford Brooke's poem) 5048
 Lord, It Belongs Not to My Care 226
 Lord my pasture shall prepare 99
 Lord of all being, throned afar 1094
 Lord, thou hast been our dwelling-place (Psalm 90) 2232
 Lord, Thou hast given me a cell 6647
 Lord Ullin's Daughter 1466
 Loss of the Royal George, The 2709
 Loud is the Vale 6768
 Lovable Child, The 7045
 Love 1954
 Love and Age 2209
 Love, Death and Reputation 1465
 Love had he found in huts where poor men lie ; (Wordsworth quoted) 465
 Love me, sweet, with all thou art 848
 Love Not Me For Comely Grace 5665
 Love of God, The 5544
 Lovelace, Richard 5544
Irish cavalier and poet (1618-1658)
 To Althea, from Prison 6405
 Lover, Samuel
Irish novelist and poet (1797-1868)
 Angels are Whispering, The 4060
 Lover and His Lass, A (Shakespeare quoted) : with music 6650
 Lowell, James Russell
American poet and critic (1819-1891)
 Aladdin 966
 Crisis, The 5543
 Fatherland, The 4183
 Fountain, The 6150
 Freedom 7033
 Look On Who Will 2708
 On Reading Burns 5178
 Parable, A (Said Christ our Lord) 2333
 Parable, A (Worn and footsore was the Prophet) 6286
 Sower, The 3200
 Stanzas on Freedom 4832
 Yussouf 2827
 Russell Lowell Quotations :
 Truth for ever on the scaffold 4204
 Lucilius, Gaius
Roman satirist (180-103 B.C.)
 Assailed the lords and those of humbler birth (quotation) 5427
 Lucy 3568
 Lucy Gray 5053
 Lucy Locket 4572
 Luke, Jemima Thompson
English hymn writer (1813-1806)
 I Think When I Read 6902
 Lullaby 4804
 Lullaby of an Infant Chief 3942
 Lute-voice birds rise with the light, The 1346
 Lynd, Sylvia
Irish author and poet
 Return of the Goldfinches, The 6636
 Lyte, Henry Francis
British clergyman (1793-1847)
 Abide with me 2459
 Officer's Grave, The 2710
 Lytton, Lord
English novelist and poet (1803-1873)
 Who Trusts in God 2212
 Macaulay, Lord
English historian and poet (1800-1859)
 How Horatius Kept the Bridge 6883
 Jacobite's Epitaph, A 4316
 McCrae, John
Canadian poet (1872-1918)
 In Flanders Fields 2209
 MacDonald, George
Scottish poet and novelist (1824-1905)
 Baby 4316
 Better Things 3570
 Little White Lily 3201
 Wind and the Moon, The 1715
 McGee, Thomas D'Arcy
Irish poet and historian (1825-1868)
 Man of the North Countrie, The 5290
 Mackay, Charles
Scottish poet and journalist (1814-1889)
 Deed and a Word, A 2709
 Sailor's Wife, The 4801
 Sea-King's Burial, The 5661
 There's a Good Time Coming 1598
 There's a Land, a Dear Land 6156
 To a Young Genius 1719
 Tubal Cain 1953
 Macleod, Norman
Scottish clergyman (1783-1862)
 Trust in God and Do the Right 966
 Mad Patsy said, he said to me 4315
 Magdalen at Michael's gate 4189
 Make me thy lyre (Shelley quoted) 2599
 Make way for liberty ! he cried 5045
 Make your meals, my little man 6038
 Man in the Moon, The 1724
 Man in the wilderness asked of me 1724
 Man never is, but always to be, blest (Pope quoted) 2108
 Man of life upright, The 1092
 Man of the North Countrie, The 5290
 Man Wants a Great Deal 5175
 Man wants but little here below 5175
 Man with the Hoe, The 6035
 Man's a Man for a' That, A 2826
 Man's Requirements, A 848
 March 4799
 March Meadows 478
 March winds and April showers 6904
 Mare, Walter De La : see De La Mare
 Margery Mutton-pie 6412
 Markham, Charles Edwin
American poet (1852-1940)
 Man with the Hoe, The 6035
 Outwitted 6648
 Preparedness 5796
 Marlowe, Christopher
English dramatist and poet (1564-1593)
 Passionate Shepherd, The 2212
 Marry Monday, marry for wealth 6654
 Marseillaise, The 4685
 Martial, the things that do attain 4183
 Marvell, Andrew
English poet and satirist (1621-1678)
 Girl Describes her Fawn, The 3566
 Marvell Quotations :
 He nothing common did or mean (on Charles I) 523
 World in all doth but two nations bear, The 88
 Mary had a little lamb 4188
 Mary, Mary, quite contrary 1344
 Mary Morison 357
 Mary Wedded 4576
 Masfield, John
English poet and dramatist (born 1875)
 Cargoes 4800
 Consecration, A 6893
 Massa's in de Cold, Cold Ground 5791
 Massey, Gerald
English poet (1828-1907)
 It Will End in the Right 7035
 Master I have, and I am his man 1468
 Match, A 6036
 Matthew, Mark, Luke, and John 4063
 Maud Müller, on a summer's day 2457
 Maud Singing 3329
 Maxwellton braes are bonnie 477
 Means to Attain a Happy Life 4183
 Mellow year is hastening to its close 5668
 Memory 227
 Memory, A 5422
 Men of England, who inherit 1596
 Men of Old, The 2957
 Men! whose boast it is that ye 4932
 Meredith, George
English poet (1829-1909)
 Autumn Evensong 4802
 Merry are the bells, and merry would they ring 3940
 Merry Margaret, as midsummer flower 2960
 Meynell, Alice
English poet (died 1922)
 Shepherdess, The 5664
 Mickle, William Julius
Scottish poet and translator (1735-1788)
 There's Nae Luck About the House 3568
 Mid pleasures and palaces though we may roam 6892
 Midges Dance Aboon the Burn 4182

Mile with Me, A 6890
Miles, Alfred H.
English author and editor (1848-1929)
 Big and Little Things 2088
Miller, Emily H.
American author (1833-1913)
 Jesus Bids Us Shine 1226
Miller, Joaquin
American poet and writer (1841-1913)
 For Those Who Fail 4804
Miller, Thomas
English poet and novelist (1807-1874)
 Industry of Animals, The 1346
 Mother to Her Infant, The 1716
Miller, William
Scottish poet (1810-1872)
 Wee Willie Winkie 2460
 Miller's Daughter, The 6156
 Millions of massive raindrops 1724
Milnes, Richard Monckton : see
 Houghton, Lord
Milton, John
English Puritan and poet (1608-1674)
 Let us with a Gladsome Mind 7036
 Morning of the Birth of Christ 1224
 On May Morning 3569
 To the Lord General Cromwell 2960
Milton Quotations :
 But let my due feet never fail
 (Il Penseroso) 1232
 For we were nursed upon the
 self-same hill (Lycidas) 1234
 Hail, holy Light, offspring of
 Heaven first born! (Paradise
 Lost) 1358
 He above the rest in shape and
 gesture proudly eminent
 (Paradise Lost) 1357
 He spake; and to confirm his
 words (Paradise Lost) 1357
 In either hand the hastening
 angel caught (Paradise Lost) 1358
 Mortals that would follow me
 (Comus) 1234
 Nothing is here for tears, nothing
 to wail (Samson Agonistes) 1358
 Now came still Evening on
 (Paradise Lost) 1358
 Oh, dark dark, dark amid the
 blaze of noon (Samson Agoni-
 stes) 437
 Some say no evil thing that
 walks by night (Comus) 1234
 Thou in our wonder and astonish-
 ment (On Shakespeare) 860
 Tomorrow to fresh woods and
 pastures new (Lycidas) 1234
 What needs my Shakespeare
 for his honoured bones (on
 Shakespeare) 1231
 When I consider how my light
 is spent (sonnet on his blind-
 ness) 1355
 Ye valleys low, where the mild
 whispers use (Lycidas) 1234
 Yet once more, O ye laurels,
 and once more (Lycidas) 1234
 Milton! thou should'st be living
 at this hour (Wordsworth
 quoted) 1358
 Mine be a cot beside a hill 1346
 Mine eyes have seen the glory of
 the coming of the Lord 4065
 Ministry of Angels, The 6894
 Minstrel and His Harp, The 4316
 Minstrel Boy, The 3081
 Misereere Domine 5420
 Miss Poppy 3702
 Mist was driving down the British
 Channel, A 5669
 Mr. East gave a feast 970
 Mr. Finney had a turnip 4808
 Mr. Nobody 7048
 Mistress Margaret 2960
Mitford, Mary Russell
English novelist and author (1787-1855)
 Joy of Life 733
 M.N.O. Our Pussy's in the snow 5424
 Molly my sister and I fell out 970
 Monday's child is fair of face 6411
Montgomery, James
Scottish poet and journalist (1771-1854)
 Arabia's desert ranger (quotation) 240
 Daisy at Christmas, A 2336
 Home 6648
 Patriot's Password, The 5045
 Months, The 6902

Montrose, Marquess of
Scottish royalist soldier (1612-1650)
 My Dear and Only Love 5422
 Moon doth with delight, The
 (Wordsworth quoted) 2473
 Moon, so Round and Yellow 7046
Moore, Thomas
Irish poet (1779-1852)
 Canadian Boat Song, A 3569
 Go Where Glory Waits Thee 3697
 Harp that once through Tara's
 Halls, The 3811
 Last Rose of Summer, The 4066
 Light of Other Days 2336
 Minstrel and His Harp, The 4316
 Minstrel Boy, The 3081
 Reflection at Sea, A 1838
 She is Far from the Land 3201
 Those Evening Bells 4190
 Thou Art, O God! 5294
Mordaunt, Thomas Osbert
English poet (18th century)
 Sound the Clarion 3201
 Morn'ing, evening, noon, and night 225
 Morning of the Birth of Christ 1224
Morris, George P.
American writer (1802-1864)
 Woodman, Spare that Tree 6900
Morris, Sir Lewis
Welsh poet (1833-1907)
 Tolerance 6155
Morris, William
English poet and artist (1834-1896)
 Day is Coming, The 5292
 Day of Days, The 2708
 Earthly Paradise, The 3082
 Garden by the Sea, A 3701
 People Marching On, The 4314
 Telling a tale, not too impor-
 tunate (quotation) 4080
 To Bethlehem Did They Go 3936
 Mortality, behold and fear 5551
 Mortals that would follow me 1234
 Moss was a Little Man 6654
 Most potent, grave, and reverend
 signiors (Shakespeare quoted) 6165
 Mother 2828
 Mother Earth has Room for All 6403
 Mother, may I go and bathe? 1600
 Mother Mitchell 7041
 Mother to Her Infant, The 1716
 Mother's Dream, The 6635
 Mountain and the Squirrel, The 1597
 Mountain sheep are sweeter, The 6647
 Moving moon went up the sky,
 The (Coleridge quoted) 2473
 Much have I travelled in the
 realms of gold 6034
 Mulberry Bush, The (with music) 6037
 Multiplication is vexation 1724
Munro, Neil
Scottish novelist and poet (1864-1930)
 Heather, The 6887
 To Exiles 6778
Musie, Songs and Rhymes: see Songs
Music, When Soft Voices Die 7035
 My banks they are furnished with
 bees 1225
 My beautiful! My beautiful!
 that standest meekly by 5912
 My Boat is on the Shore 358
 My Country, 'Tis of Thee 4440
 My days, w' world vok' all but
 gone 4576
 My Dear and Only Love 5422
 My dear, do you know 356
 My fairest child, I have no song
 to give you 1598
 My father he left me three acres
 of land 6411
 My Garden 98
 My good blade carves the casques
 of men 3328
 My heart aches, and a drowsy
 numbness pains 6154
 My heart is like a singing bird 4060
 My heart leaps up when I behold
 (Wordsworth quoted) 2476
 My house is red, a little house 356
 My Lady walks on diamond dust 5662
 My Lady's Garden (with music) 1341
 My Land 6158
 My Little Corner 2828
 My Little Googly-Goo 4681
 My little old man and I fell out 1840
 My little room is high up in the
 house 2828

My little son, who looked from
 thoughtful eyes 6641
 My Love is Good 4575
 My love is like a red, red rose 2224
 My maid Mary 1600
 My mind lets go a thousand things 227
 My mind to me a kingdom is 2460
 My Mother 5295
 My Native Vale 4573
 My noble, lovely little Peggy 5669
 My Old Friend 7044
 My own dim life should teach me
 this (Tennyson quoted) 6911
 My Own shall Come to Me 5422
 My parents bow, and lead me forth 2086
 My Peggy is a young thing 6287
 My Playmate 5418
 My Pretty Maid (with music) 4936
 My Shadow 4929
 My Ships 6635
 My son, when you stand looking
 right, and left 6152
 My soul, sit thou a patient looker-
 on 3942
 My soul, there is a country 4801
 My strength is failing fast 5661
 My tiny lady, can it be true 7042
 My true love hath my heart 4680
 My Will 6158
 Mysterious night! when our first
 parent knew 4066
Nairne, Lady Caroline
Scottish ballad writer (1766-1845)
 Land o' the Leal, The 4930
 Name in the Sand, A 2206
 Napoleon's Farewell 7043
 Nation's Strength, A 2208
 Nearer, my God, to Thee 1722
 Nesting Hour, The 478
 Never Despair, O my Comrades 7035
 New Pelisse, The 478
 New Zealand 5174
Newbolt, Sir Henry
English author and poet (1862-1938)
 Best School of All, The 4929
 Drake's Drum 6891
 Torch of Life, The 6151
Newman, John Henry
English theologian (1801-1890)
 Lead, Kindly Light (quotation) 1757
 Nick and a nock, A 1724
 Night and Death 4066
 Night has a thousand eyes, The 477
 Nightingale and the Glow-worm 847
 Nightingale that all day long, A 847
 Nine years old! The first of any 5421
 No Coward Soul is Mine 3566
 No joy the blowing season gives
 (Tennyson quoted) 6911
 No, life for me has lost its spell 2828
 No longer half-akin to brute
 (Tennyson quoted) 6914
 No longer mourn for me when I am
 dead (Shakespeare's sonnet) 6415
 No-man is my name (Homer
 quoted) 5306
 No, no, my friends, my wants are
 few 604
 No, no, no, no! Come, let's away
 to prison (Shakespeare quoted) 6170
 No stir in the air, no stir in the sea 6634
 No sun, no moon 1345
 No truer, kinder soul 5042
 None is Lord of All 6646
 Norman Baron, The 5290
 North and the South, The 4568
 North wind doth blow, The (with
 music) 2950
Norton, Caroline
Irish poet and novelist (1808-1877)
 Arab's Farewell to his Steed, The 5912
 We have been Friends Together 3081
 Not a drum was heard, not a
 funeral note 1465
 Not a Word of Fear 4182
 Not gold, but only man, can make
 Not of an age, but for all time
 (Ben Jonson quoted) 858
 Not of the princes and prelates
 with periwigged charioteers 6893
 Not once or twice in our rough
 island-story (Tennyson quoted) 2351
 Nothing is here for tears, nothing
 to wail (Milton quoted) 1358
 November 5668
 November in England 1345

- Now, all of you, give heed unto . . . 1600
 Now came still Evening on (Milton quoted) . . . 1358
 Now England breathes in the hope of liberty (quotation) . . . 840
 Now fades the last long streak of snow (Tennyson quoted) . . . 6914
 Now give us lands where the olives grow . . . 4568
 Now he who knows old Christmas . . . 1956
 Now I want Spirits to enforce, art to enchant (Shakespeare quoted) . . . 1108
 Now little children listen unto me . . . 129
 Now stir the fire, and close the shutters fast . . . 5177
 Now Thank We All Our God . . . 6408
 Now the bright morning star, day's harbinger . . . 3569
 Now the Day is Over . . . 4189
 Now the furnaces are out . . . 5174
 Now 'tis nought but restless hurry through the busy air (James Thomson quoted) . . . 2102
 Now we dance looby, looby (with music) . . . 2211
 Now what do you think of little Jack Jangle? . . . 1600
Noyes, Alfred
English poet and story writer (born 1880)
 Slave and Emperor . . . 4930
 World's May Queen, The . . . 6407
 Nurse's Song . . . 1955
O blithe new-comer! . . . 7036
O! but they say the tongues of dying men (Shakespeare quoted) . . . 6533
O Captain! My Captain! . . . 5294
O Dear Sixpence (with music) . . . 3815
O dear, what can the matter be? . . . 7048
O dream not that the amorous deep (Shelley quoted) . . . 2599
O for a lodge in some vast wilderness . . . 2583
O God! methinks it were a happy life (Shakespeare quoted) . . . 6531
O God, our Help in Ages Past . . . 3082
O God, when You send for me . . . 3811
O it is excellent! (Shakespeare quoted) . . . 6536
O little lambs! the month is cold . . . 478
O love! O spirit of being . . . 1954
O Mary, at thy window be . . . 357
O Mary, go and call the cattle home . . . 730
O may I join the choir invisible . . . 4184
O Mistress Mine (with music) . . . 5301
O my love's like a red, red rose . . . 731
O Nanny, wilt thou gang wi' me? . . . 5175
O rare Harry Parry . . . 6779
O Romeo, Romeo! Wherefore art thou, Romeo? (Shakespeare quoted) . . . 6161
O sailor, tell me, tell me true . . . 1089
O say, what is that thing called light . . . 1090
O that we now had here (Shakespeare quoted) . . . 6291
O the days gone by! . . . 6900
O! then, I see Queen Mab hath been with you (Shakespeare quoted) . . . 6534
O Thou, that sendest out the man . . . 6888
O thou, whose everlasting sway controls (Virgil quoted) . . . 5554
O Wert Thou in the Cauld Blast . . . 1092
O who will walk a mile with me? . . . 6890
O wild West Wind, thou breath of Autumn's being . . . 7043
O, Willow, Willow (with music) . . . 6651
O World, be Nobler . . . 5670
Oats and beans and barley grow . . . 6779
Ode on Immortality . . . 7031
Ode on the Death of Wellington . . . 4057
Ode to Duty . . . 6770
Ode to the North-east Wind . . . 6409
Ode to the West Wind . . . 7044
O'er a low couch the setting sun had thrown its latest ray . . . 2205
O' a' the airts the wind can blow . . . 1838
Of all the gay birds that e'er I did see . . . 970
Of all the girls that are so smart . . . 228
Of comfort no man speak (Shakespeare quoted) . . . 6533
Of Heaven or Hell I have no power to sing . . . 3082
Of mornings bright and early . . . 4681
Of Nelson and the North . . . 3199
Of Old Sat Freedom on the Heights . . . 3326
Officer's Grave, The . . . 2710
Oft I had heard of Lucy Gray . . . 5053
Oft in the Silly Night . . . 2336
Ogilvie, Will H.
Scottish author and poet (born 1869)
 Apple Winds, The . . . 5790
 Oh, a dainty plant is the ivy green . . . 967
 Oh, a wonderful horse is the Fly-Away Horse . . . 1095
 Oh, all you little blackey-tops (with music) . . . 6776
 Oh beauty, oh divine, white wonder . . . 67
 Oh, clear your hearts of dread, and banish care! (Virgil quoted) . . . 5554
 Oh, dark, dark, dark amid the blaze of noon (Milton quoted) . . . 437
 Oh, hush thee, my baby! thy sire was a knight . . . 3942
 Oh, Look at the Moon . . . 1723
 Oh, my pretty cock! O, my handsome cock! . . . 970
 Oh, ring the bells . . . 4807
 Oh, the brave old Duke of York (with music) . . . 3442
 Oh, the sweet contentment . . . 5551
 Oh, to be in England . . . 2208
 Oh, was I born too soon, my dear? . . . 4439
 Oh, when the friends we used to know . . . 4575
 Oh where and oh where is my little wee dog? . . . 4807
 Oh, where are all the good little girls? . . . 1599
 Oh, where do you come from? . . . 5672
 Oh, who is so merry, so merry, heigh ho! . . . 5296
 Oh, why left I my name? . . . 6153
 Oh, yet we trust that somehow good (Tennyson quoted) . . . 6912
 Oh, young Lochinvar is come out of the West . . . 2707
O'Keeffe, Adelaide
English writer (1776-1855)
 Eyes and No Eyes . . . 6901
 Old Abram Brown is dead and gone . . . 7052
 Old Christmas (Mary Howitt) . . . 1956
 Old Christmas (Walter Scott) . . . 3934
 Old Clock on the Stairs, The . . . 2581
 Old emperor Yew, fantastic sire . . . 6523
 Old Familiar Faces The . . . 3813
 Old Folk Dead, The . . . 4576
 Old Folks at Home . . . 4440
 Old Friend, An . . . 4575
 Old Hundredth . . . 5912
 Old King Cole (with music) . . . 5546
 Old Man who lived in a Wood, The . . . 7050
 Old Mother Goose and her Gander . . . 1962
 Old Mother Hubbard . . . 103
 Old Superstitions . . . 6654
 Old things need not be therefore true . . . 357
 Old Tubal Cain was a man of might . . . 1953
 Old Woman and Her Pig, The . . . 7049
 Old Woman in the Attic, The . . . 2828
 Old woman, old woman, shall we go a-shearing? . . . 852
 Old Woman Tossed in a Basket . . . 1096
 Old Woman was sweeping her house, An . . . 7049
 Old Yew . . . 6523
Omar Khayyam
Persian astronomer (11th-12th century)
 Earth could not answer; nor the seas that mourn (FitzGerald's version of Rubaiyat quoted) . . . 5676
 When You and I behind the Veil are past (FitzGerald's version of Rubaiyat quoted) . . . 5676
 On a headland in Panama . . . 4439
 On a Little Lady's Third Birthday . . . 7042
 On a People's Poet . . . 6893
 On Charles the Second . . . 2460
 On Christmas Eve I turned the spit . . . 4572
 On Earth there is nothing great but Man . . . 90
 On looking into Chapman's Homer . . . 6034
 On May Morning . . . 3569
 On parent knees, a naked newborn child . . . 6285
 On Reading Burns . . . 5178
 On Saturday night . . . 4934
 On Sir Philip Sidney . . . 729
 On the Bridge of Avignon . . . 7041
 On the green banks of Shannon . . . 5792
 On the Tombs in Westminster Abbey . . . 5551
 Once did she hold the gorgeous East in fee . . . 6892
 Once I saw a little bird . . . 6779
 Once in Persia ruled a king . . . 5173
 Once in Royal David's City . . . 3941
 Once more the lark with song and speed . . . 4802
 Once more unto the breach, dear friends (Shakespeare quoted) . . . 6534
 Once on a time I saw a bear . . . 1724
 Once on a time Love, Death, and Reputation . . . 1465
 Once upon a midnight dreary . . . 3563
 One and One . . . 1599
 One Clear Call, The . . . 6152
 One honest John Tompkins . . . 2711
 One, I love; two, I love . . . 608
 One lesson, Nature, let me learn of thee . . . 850
 One little brown bird (with music) . . . 1004
 One misty, moisty morning . . . 231
 One Of Us Two . . . 5291
 One sail in sight upon the lonely sea . . . 5287
 One, two, buckle my shoe . . . 972
 One, two, three . . . 6779
 One who never turned his back (Browning quoted) . . . 3462
 Only a Baby Small . . . 99
 Only a little more . . . 7043
 Only a man harrowing clods . . . 6770
 Onward, brave men, onward go . . . 5668
 Opportunity . . . 4314
 Or at times a modern volume (E. B. Browning quoted) . . . 3455
 Oranges and Lemons (with music) . . . 6528
O'Reilly, John Boyle
Irish-American author (1844-1890)
 Cry of the Dreamer, The . . . 5044
 Orpheus and his Lute . . . 7036
Ort-Ewing, Juliana Horatia
English writer for children (1841-1885)
 Burial of the Linnet, The . . . 1226
O'Shaughnessy, Arthur
British poet (1844-1881)
 Heart to Keep, A . . . 5791
 St. John Baptist . . . 5172
 We are the Dreamers of Dreams . . . 6524
O'Sullivan, Seumas
Irish author (born 1879)
 Piper, A . . . 6287
 Others abide our question . . . 732
 Our Babe Walks in his garden . . . 4684
 Our birth is but a sleep and a forgetting (Wordsworth quoted) . . . 3716
 Our doubts are traitors (Shakespeare quoted) . . . 6536
 Our England's heart is sound as oak . . . 5664
 Our land, our land, our native land . . . 5420
 Our revels now are ended (Shakespeare quoted) . . . 1108
 Our saucy boy Dick . . . 6780
 Out of the focal and foremost fire . . . 2582
 Out of the frozen earth below . . . 3565
 Out of the Night . . . 6286
 Out on the mountain over the town . . . 4683
 Outside the door the New Year knocks . . . 1717
 Outwitted . . . 6648
 Over hill, over dale (Shakespeare quoted) . . . 6294
 Over the Hills and Far Away (with music) . . . 3078
Owen, Everard
English poet
 Three Hills . . . 2958
 Owl, The . . . 4685
 Owl and the Eel, The . . . 7045
 Owl Critic, The . . . 4317
 Owl to her mate is calling, The . . . 2086
Oxenham, John
English novelist and poet (died 1941)
 Diamond Dust . . . 5662
 Great-Heart . . . 5177

- What Can a Little Chap Do? .. 5797
 Ozymandias of Egypt 4932
- Pack, Clouds, Away!** 5914
- Palgrave, Francis Turner**
English poet and critic (1824-1897)
 Paulinus and Edwin 5047
 Pan! Qu'est-ce? qu'est la? (with music) 4442
 Pansies, lilies, kingcups, daisies .. 6898
 Parable, A (Coman Doyle) 5549
 Parable, A (Lowell) 2333, 6286
 Paradise Lost (quotation) 1358
 Parts of one stupendous whole (Pope quoted) 3280
 Passionate Shepherd, The 2212
 Pat-a-cake, pat-a-cake 102
 Path by which we twain did go, The (Tennyson quoted) .. 6910
- Patmore, Coventry**
English poet (1823-1896)
 Toys, The 6641
 Patriot, The 358
 Patriot's Password, The 5045
 Paulinus and Edwin 5047
- Payne, John Howard**
American dramatist (1792-1852)
 Home, Sweet Home 6892
 Peace 4801
 Peace was the prize of all his toil and care (Dryden quoted) .. 1610
- Peacock, Thomas Love**
English novelist and poet (1785-1866)
 Love and Age 2209
 War Song of Dinas Vawr, The .. 6647
 Peasant Poet's Lament, A 6633
 Peasant stood before a king, A .. 5789
 Pease-pudding hot 230
- Peele, George**
English dramatist and poet (1558-1598)
 His golden locks Time hath to silver turned (quotation) .. 1928
 Peg, Peg, with a wooden leg 852
 Peggy 6287
 Penny Was a Pretty Girl 7047
 People Marching On, The 4314
 People's Anthem, The 1340
- Pepler, H. A. C.**
 Law the Lawyers Know About .. 6887
- Percy, Thomas**
English antiquary (1729-1811)
 O Nanny, Wilt Thou Gang Wit' Me? 5175
- Perform, ye Trojans!** what the rites require (Homer quoted) .. 5304
- Peter, Peter, pumpkin-eater** .. 1344
- Peter Piper** picked a peck of pickled pepper 7051
- Peter White** will ne'er go right .. 852
- Phillips, Colwyn**
English poet (1888-1915)
 At the Gate 6890
 Phillida and Corydon 2958
 Philomel 3699
- Platt, Sarah M. B.**
American poet (1836-1919)
 Into the World and Out 6901
 Picture of a Happy Man 1720
 Pictures in the Fire 5798
 Pie sat on a pear tree, A 1468
 Pied Piper of Hamelin, The .. 6031
 Piggy Wiggy Wee (with music) .. 6773
 Pilgrim Fathers, The 2212
 Pines were dark on Ramoth hill .. 5418
 Piper in the streets today, A .. 6287
 Piper Play 5174
 Piping Down the Valleys Wild .. 99
 Pippa's Song 6900
 Pit, pat, well-a-day 6779
 Pittypat and Tippetoe 1090
 Plant loverlier in its own recess (quotation) 84
 Planting the Apple Tree 603
 Play's the thing, The (Shakespeare quoted) 6163
 Playgrounds 478
 Please to remember the Fifth of November 230
 Plough, The 2582
- Poe, Edgar Allan**
American writer and poet (1809-1849)
 Annabel Lee 6282
 Bells, The 2825
 Raven, The 3563
 Poet and King 3700
 Poet and the Bird, The 3438
 Poet's cat, sedate and grave, A .. 2711
- Poet's eye in a fine frenzy rolling, The (Shakespeare quoted) .. 3957
 Poet's Mission, The 5795
 Poet's Song, The 3567
 Poetry of Earth is never Dead .. 5293
 Polichinelle (with music) 4442
 Polly, Put the Kettle On (with music) 605
 Poor Billy boy was music mad .. 1599
 Poor Dicky's dead 4062
 Poor old Robinson Crusoe! 971
 Poor Robin (with music) 2959
 Poor soul sat sighing by a sycamore tree, A (with music) .. 6651
- Pope, Alexander**
English poet (1688-1744)
 Solitude 3701
- Pope Quotations:**
 By foreign hands thy dying eyes were closed (Elegy to Memory of an Unfortunate Lady) .. 1611
 Essay on Criticism 1612
 Parts of one stupendous whole (Essay on Man) 3280
- Poulsson, Emilie**
American writer (1853-1939)
 Lovable Child, The 7045
- Praed, William Mackworth**
English poet (1802-1839)
 Laugh On 1717
 Prayer of Robert Herrick, The .. 3699
 Prayer Perfect, The 6239
 Prayers 6683
 Preparedness 5796
 Pretty flowers, tell me why 734
 Pretty maid, pretty maid 102
 Prince Tatters 5298
- Prior, Matthew**
English poet and diplomat (1664-1721)
 Letter, A 3669
- Procter, Adelaide Anne**
English poet (1825-1864)
 Doubting Heart, A 4930
 Pictures in the Fire 5798
 Prophetic soul of the wide world, The (Shakespeare quoted) .. 860
 Prospe 967
 Psalm of Life, A 4932
 Punch and Judy 1600
 Punchinello (with music) 4442
 Pure, the bright, the beautiful .. 4804
 Pussy sits beside the fire 7052
 Pussy-cat ate the dumplings 734
 Pussy-cat High, Pussy-Cat Low (with music) 5051
 Pussy-cat Mole jumped over a coal 5297
 Pussy-cat, Where Have You Been? (with music) 4569
- Quality of mercy is not strained,** The (Shakespeare quoted) .. 982
- Quarles, Francis**
English poet (1592-1644)
 Respite Finem 3942
 Queen and the Flowers, The .. 845
 Queen Anne, Queen Anne, she sits in the sun 6904
 Queen Mab 730
 Quiet passing ships, The 6523
 Quiet Work 850
 Quinquireme of Nineveh from distant Ophir 4800
 Quoth the Cedar to the Reeds and Rushes 5795
- Railway Train, The** 3566
 Rain had fallen, the Poet arose .. 3567
 Rain in Summer 3570
 Rainbow, The 1596
- Raleigh, Sir Walter**
English author (1552-1618)
 Conclusion, The 2460
 Ramène Tes Moutons 7041
- Ramsay, Allan**
Scottish poet (1686-1758)
 Peggy 6287
- Rands, William Brighty**
English poet and essayist (1823-1882)
 Cuckoo in the Pear Tree 6903
 Flowers, The 5422
 Heaven Keep My Girl For Me .. 6038
 I Saw the Beauty of the World .. 4573
 Thought, The 6777
 Topsy-Turvy World 3572
 World, The 1839
- Rankin, Jeremiah Eames**
American minister & writer (1828-1904)
 Word of God to Leyden Came .. 6648
 Rarely, rarely, comest thou 6769
 Rarer pleasure is it is more sweet .. 6646
 Raven, The 3563
 Real History of the Apple-Pie .. 7047
 Realm of Fancy, The 4313
 Reaper, The 5054
 Recessional 4680
 Red, Red Rose, A 731
 Red Thread of Honour, The .. 5549
 Red-tipped are the elm trees with the faint thin flame 1717
 Reflection at Sea, A 1838
 Remember me when I am gone away 6158
 Requiem 5797
 Respite Finem 3942
 Retired Cat, The 2711
 Return of the Goldfinches, The .. 6636
 Revenge, The 4437
- Richards, Laura E.**
American writer (1850-1943)
 Difference, The 6901
 Owl and the Eel, The 7045
 Prince Tatters 5298
 Ride a Cock-Horse (with music) .. 6525
 Ride away, ride away, Johnny shall ride 1468
 Ride, baby, ride! 6779
 Ride of Paul Revere, The 3695
 Ride on a Wild Horse, The 5415
 Right well, my lord, quoth she (Chaucer quoted) 5802
- Riley, James Whitcomb**
American poet (1853-1916)
 Days Gone By, The 6900
 Extremes 4317
 Funny Little Fellow, The 6160
 If I Knew what Poets Know .. 6640
 Ike Walton's Prayer 6638
 Land of Thus-and-So, The 3204
 Let Something Good Be Said .. 6640
 Prayer Perfect, The 6639
 Spring is Coming, The 5668
 Twins, The 6639
 Who Bides His Time 6637
 Ring out, wild bells, to the wild sky (Tennyson quoted) .. 240, 6914
 Ring the alarm-bell! Blow, wind! Come, wrack (Shakespeare quoted) 6169
 Ring the bells—ring! 6411
 Ring-ing! I wish I were a Primrose .. 1723
- Rinkart, Martin**
German pastor and writer (1586-1649)
 Now Thank We All Our God .. 6408
 River, The (Charles Kingsley) .. 1464
 River, The (F. E. Weatherly) .. 5054
 Robert Barnes, fellow fine 232
 Robin-a-Bobin 5545
 Robin and Richard were two pretty men 5297
 Robin and the Wren, The 734
 Robin-Friend has gone to bed .. 478
 Robin Hood, Robin Hood 4935
 Robin Redbreast 846
 Robin sings on a leafless spray, A .. 5053
 Robin the Bobin 1840
 Robin with the red breast, The .. 4063
- Rochester, Earl of**
English courtier (1647-1680)
 On Charles the Second 2460
- Rock-a-by baby, thy cradle is green** 5297
 Rock-a-by Lady, The 6895
 Rocked in the Cradle of the Deep .. 4060
- Rogers, Samuel**
English banker and poet (1763-1855)
 Ginevra 3075
 My Native Vale 4573
 Venice 5420
 Wish, A 1346
 Roguey, poguey Bogie Man, A .. 5800
 Rook's nest do rock on the tree-top, The 4804
- Roscoe, William**
English historian and poet (1753-1831)
 Butterfly's Ball, The 4806
 Rose dreamed she was a lily 734
 Rose is red, the violet's blue, The .. 7051
- Rossetti, Christian**
English poet (1830-1894)
 Birthday, A 4060
 City Mouse and Garden Mouse .. 7045

- Remember 6158
Up-Hill 1839
What Can I Give Him ? 3935
When I am Dead, my Dearest . . 6404
Rouget de Lisle, Claude Joseph
French poet and composer (1760-1836)
Marseillaise, The 4685
Round de meadows am a-ringing . 5791
Royal feast was done, The . . . 1716
Rub-a-dub-dub 231
Rule, Britannia ! 4574
Rules for Behaviour 4806
Run, shepherds, run where Bethle-
hem blest appears 3935
Runeberg, Johan Ludvig
Swedish poet (1804-1877)
Sweden 5420
Ruth 1954
- Said a people to a poet : " Go out
from among us straightway " . . 3438
Said Christ our Lord, I will go and
see 2333
Said the Wind to the Moon, I will
blow you out 1715
Sailor's Wife, The 4801
St. John Baptist 5172
Sally in our Alley 228
Sammy Smith would drink and
eat 2711
Sandford, Egbert
English poet (1871-1949)
After Sixty Years 1720
Thanks 2210
Two Wagons 2828
Sandpiper, The 5043
Sands of Dee, The 730
Sargent, Epes
American poet (1813-1880)
Life on the Ocean Wave, A . . . 3811
Suppose the Little Cowslip . . . 2337
Saul, King of Israel (David's
Lament for, quoted) 614
Saxe, John Godfrey
American poet (1816-1887)
Misere Domine 5420
Say, Heavenly Muse, shall not
thy sacred vein 1224
Say not, because he did no won-
drous deed 604
Say Not the Struggle Naught
Avaleth 477
Says Tweed to Till 5911
Scantlebury, Elizabeth
American writer for children
Laughing Brook, The 3810
Scent of bramble fills the air,
The 5663
Schiller, Friedrich
German poet and dramatist (1759-1805)
Mother Earth has Room for All . 6403
Scots, who hae wi' Wallace bled . . 3700
Scott, Sir Walter
Scottish poet and novelist (1771-1832)
Breathes there the Man 7034
Hunting Song 6036
Jock of Hazeldean 3813
Lay of the Last Minstrel, The . . 6896
Lullaby of an Infant Chief . . . 3942
Old Christmas 3934
Time 3568
Young Lochinvar 2707
Sea, The 850
Sea! The Sea! the open Sea! . . . 850
Sea-gull, sea-gull, sit on the sand . 6904
Sea-King's Burial, The 5661
Sears, Edmund H.
American minister (1810-1876)
It Came Upon the Midnight
Clear 5046
Season of mists and mellow fruit-
fulness 5550
See a pin and pick it up 356
See how beneath the moonbeam's
smile 1838
See, the kitten on the wall . . . 3330
See, what a wonderful garden is
here 4684
Seed Shop, The 5797
See-saw, Margery Daw 7051
See-saw, sacaradown 1724
Selkirk Grace, The 358
Sense of death is most in appre-
hension (Shakespeare quoted) . . 6536
Serene, I fold my hands and wait . 5422
Seven Days, The 248
Seven days he travelled 7037
- Seven Times One 1225
Seven Years 5048
Shades of night were falling fast . 1598
Shake off Slumber (with music) . . 5300
Shakespeare (Matthew Arnold) . . 732
Shakespeare, William
English poet and dramatist (1564-1616)
All the world's a stage (As You
Like It) 984, 6048
Crabbed Age and Youth (The
Passionate Pilgrim) 6535
Current that with gentle murmur
glides, The (Two Gentlemen
of Verona) 980
Every one that flatters thee (The
Passionate Pilgrim) 6535
Farewell, a long farewell, to all
my greatness! (Henry VIII) . . 6531
Fear no more the heat o' the Sun
(Cymbeline) 1108
Friends, Romans, countrymen,
lend me your ears (Julius
Caesar) 6292
Give thy thoughts no tongue
(Hamlet) 1102, 6531
Good Morrow, Hubert (King
John) 6529
How many thousand of my
poorest subjects (Henry IV) . . 6535
How sweet the moonlight sleeps
upon this bank (Merchant of
Venice) 982
I am never merry when I hear
sweet music (Merchant of
Venice) 6533
I know a bank whereon the wild
thyme blows (A Midsummer
Night's Dream) 6294
It is the cause, it is the cause, my
soul! (Othello) 1107
Let me have men about me that
are fat (Julius Caesar) 1101
Most potent, grave, and reverend
signiors (Othello) 6165
No, no, no, no! Come, let's
away to prison (King Lear) . . 6170
O! but they say the tongues of
dying men (Richard II) . . . 6533
O God! methinks it were a
happy life (Henry VI) 6531
O! that we now had here
(Henry V) 6291
O! then I see Queen Mab hath
been with you (Romeo and
Juliet) 6534
Of comfort no man speak
(Richard II) 6533
Once more into the breach, dear
friends (Henry V) 6534
Our revels now are ended. These
our actors (The Tempest) . . 1108
Quality of mercy is not strained,
The (Merchant of Venice) . . . 982
So work the honey bees
(Henry V) 6530
This England never did, nor
never shall (King John) . . . 981
This royal throne of kings, this
sceptered isle (Richard II) . . 981
This was the noblest Roman of
them all (Julius Caesar) . . . 1102, 6293
Time's glory is to calm contend-
ing kings (Lucrece) 859
To be, or not to be, that is the
question (Hamlet) 6533
Tomorrow, and tomorrow, and
tomorrow (Macbeth) 1107, 6168
What must the king do now?
(Richard II) 6530
What's he that wishes so?
(Henry V) 6291
You do look, my son, in a moved
sort (The Tempest) 6296
Shakespeare Quotations:
And all the faith, the virtue of
my heart (Midsummer Night's
Dream) 6295
And oftentimes, excusing of a
fault (King John) 6536
And so, from hour to hour, we
ripe and ripe (As You Like It)
At Christmas I no more desire a
rose (Love's Labour's Lost) . . 6536
Between the acting of a dreadful
thing (Julius Caesar) 6536
But 'tis a common proof (Julius
Caesar) 6536
Cowards die many times before
their deaths (Julius Caesar) . . 6292
Duncan is in his grave (Macbeth) 6168
Eyes, look your last (Romeo and
Juliet) 6162
Farewell to you—and you—and
you, Volunnus (Julius
Caesar) 1102, 6293
Friend should bear his friend's
infirmities, A. (Julius Caesar) 6536
Good name in man and woman,
dear my lord (Othello) . . . 6536
Great Glamis! Worthy Cawdor
(Macbeth) 6168
He doth bestride the narrow
world (Julius Caesar) 2874
His life was gentle; and the
elements (Julius Caesar) . . . 240
How far that little candle throws
his beams (Merchant of Venice) 6536
How oft the sight of means to do
ill deeds (King John) 6536
I count myself in nothing else so
happy (Richard II) 6536
I dare do all that may become a
man (Macbeth) 6536
I kissed thee ere I killed thee :
no way but this (Othello) . . 6166
I Richard's body have interred
anew (Henry V) 5873
If all the year were playing
holidays (Henry IV) 6536
Ignorance is the curse of God
(Henry VI) 2974
Life every man holds dear
(Troilus and Cressida) 6536
Look with thine ears (King Lear) 244
Now I want Spirits to enforce,
art to 'enchant (The Tempest) 1108
O! it is excellent to have a
giant's strength (Measure for
Measure) 6536
O Romeo, Romeo! Wherefore
art thou Romeo? (Romeo and
Juliet) 6161
Our doubts are traitors (Mea-
sure for Measure) 6536
Play's the thing, The (Hamlet) 6163
Poet's eye in a fine frenzy rolling
(A Midsummer Night's Dream) 3957
Ring the alarum-bell! Blow,
wind! Come, wrack (Macbeth) 6169
Sense of death is most in
apprehension, The (Measure
for Measure) 6536
There is a tide in the affairs of
men (Julius Caesar) 6536
This happy breed of men
(Richard II) 1928
This is a stem (Henry V) . . . 6290
Though his bark cannot be lost
(Macbeth) 1107
To be a queen in bondage is
more vile (Henry VI) 6536
To gild refined gold, to paint the
liv (King John) 6536
Twill make me think the world
is full of rubs (Richard II) . . 5615
Vex not his ghost! O! let him
pass (King Lear) 1107, 6170
What is this castle called that
stands hard by? (Henry V) 6291
What stronger breastplate than a
heart untainted? (Henry VI) 6536
What's in a name? (Romeo
and Juliet) 6229
You are too much mistaken in
this king (Henry V) 6290
Shakespeare Songs :
All that glitters is not gold
(Merchant of Venice) 6042
Blow, Blow, thou Winter Wind
(As You Like It), 984; with
music 5302
Come Buy! Come Buy! (The
Winter's Tale) with music . . 5300
Come unto these yellow sands
(The Tempest) 1108
Full fathom five thy father lies
(The Tempest) 1108
Lover and His Lass, A (As You
Like It) with music 6650
O, Mistress Mine (Twelfth
Night) with music 5301
O, Willow, Willow (Othello)
with music 6651

- Orpheus and his Lute (Henry VIII) 7036
 Over hill, over dale (A Midsummer Night's Dream) 6294
 Shake off Slumber (The Tempest) with music 5300
 Tell me where is fancy bred (Merchant of Venice) 6042
 Under the greenwood tree (As You Like It) 984
 When icicles hang by the wall (Love's Labour's Lost) 980
 When That I Was a Little Tiny Boy (Twelfth Night) with music 6652
 Where the bee sucks there suck I (The Tempest), 1108; with music 5299
 While you here do snoring lie (The Tempest), 6296; with music 5300
 Who is Sylvia? What is she? (Two Gentlemen of Verona), 980; with music 6649
 You spotted snakes, with double tongue (A Midsummer Night's Dream) 984, 6294
- Shakespeare Sonnets :**
 Being your slave, what should I do but tend 6415
 From you I have been absent in the Spring 6416
 Full many a glorious morning have I seen 6414
 Let me not to the marriage of true minds 6416
 Like as the waves make towards the pebbled shore 6415
 No longer mourn for me when I am dead 6415
 Shall I compare thee to a summer's day 860
 Since brass, nor stone, nor earth, nor boundless sea 6415
 That time of year thou mayest in me behold 6416
 When I have seen by Time's fell hand defaced 6415
 When in the chronicle of wasted time 6416
 When to the sessions of sweet silent thought 6414
 Shall I compare thee to a summer's day? 860
 Shall I sing? says the Lark 7051
- Shanks, Edward**
English poet (born 1892)
 Boats at Night 5663
 She dwelt among the untrodden ways 3568
 She is a rich and rare land 6158
 She is a winsome wet thing (Burns quoted) 2222
 She is Far from the Land 3201
 She is not fair to outward view 5289
 She stood breast-high amid the corn 1954
 She walks in beauty 6890
 She walks—the lady of my delight 5664
 She was a Phantom of Delight 6408
 Shed no tear! O, shed no tear! 1839
- Shelley, Percy Bysshe**
English poet (1792–1822)
 Adonais 6765
 Away, Away, from Men and Towns 6646
 Cloud, The 4567
 Music, When Soft Voices Die 7035
 Ode to the West Wind 7044
 Ozymandias of Egypt 4932
 Song 6769
 To a Skylark 6281
 To Night 4799
 To the Moon 6522
- Shelley Quotations :**
 Another Athens shall arise (Hellas) 2598
 Based on the crystalline sea (Hellas) 674
 Where 'twas our wont to ride while day went down (Julian and Maddalo) 2599
- Shenstone, William**
English poet (1714–1763)
 Shepherd's Cot, The 1225
 Shepherd, The 7046
- Shepherd Boy Sings in the Valley of Humiliation, The 228
 Shepherd's Cot, The 1225
 Shepherdess, The (Alice Meynell) 5664
 Shepherdess, The (with music) 4443
 Shepherds, rejoice, lift up your eyes 3935
- Shillito, Edward**
English Congregationalist (born 1872)
 Heavens in London Town, The 6157
- Shirley, James**
English dramatist and poet (1596–1666)
 Death the Victor 5419
 Earthly Glory 5419
 Should auld acquaintance be forgot 2208
 Shuffle-Shoon and Amber-Locks 6772
 Shut-Eye Train, The 98
- Sidney, Sir Philip**
English poet and soldier (1554–1586)
 Ditty, A 4680
 Signal to engage shall be, The 1092
 Signs of Rain 2960
- Sigourney, Lydia Huntley**
American author (1791–1865)
 I Must Not Tease My Mother 733
 Silence augmenteth grief 729
- Sill, Edward Rowland**
American poet (1841–1887)
 Fool's Prayer, The 1716
 Opportunity 4314
 Similar Cases 1954
 Simon Brodie had a cow 4062
 Simple Simon Met a Pieman 104, 5671
 Since brass, nor stone, nor earth, nor boundless sea 6415
 Since singing is so good a thing (William Byrd quoted) 142
 Sing a song of sixpence (with music) 1961
 Sing, sing, what shall I sing? 6904
 Sing the birth was born tonight 3936
 Singer, The 6772
 Sir Galahad 3328
 Six little mice sat down to spin 6412
 Six little mice they lived in a wood 2712
- Skelton, John**
English poet (1460–1529)
 Mistress Margaret 2960
 Sky is dark and the hills are white 4683
 Skylark, The 5664
 Slave and Emperor 4930
 Slavery and War 2583
 Sleep 2458
 Sleep, Baby, Sleep (J. A. Symonds) 3936
 Sleep, baby, sleep (rhyme) 5545
 Sleep, Beauty Bright 848
 Sleep doubtless and secure (Shakespeare quoted) 6290
 Sleep, Little One, Sleep 4683
 Sleep, little pigeon, and fold your wings 4682
 Sleep, sleep, beauty bright 848
 Sleeping Beauty, The 5663
 Slowly England's sun was setting 6643
 Slumber, my darling, no danger is near 1716
- Smith, Horace**
English parodist add poet (1779–1849)
 Address to an Egyptian Mummy 5665
- Smith, Samuel Francis**
American minister (1808–1895)
 My Country, 'Tis of Thee 4440
 Snail, snail, come out of your hole 6780
 Sneel, snail 4935
 Sneeze on Monday 1840
 So careful of the race she seems (Tennyson quoted) 207
 So here hath been dawning 6405
 So hour by hour (Big Ben's song) 6832
 So Live 6285
 So night is grandeur to our dust 967
 So, so, Rock-a-By So 4682
 So work the honey bees (Shakespeare quoted) 6530
 Soldier, The 228
 Sole Bidder, The 6407
 Solitude 3701
 Solomon Grundy 971
 Some hae meat, and canna eat 358
 Some say no evil thing that walks by night (Milton quoted) 1234
 Somebody's Mother 3702
 Sometimes 5669
 Somewhat back from the village street 2581
- Son of the ocean isle ! 6157
 Song (Hartley Coleridge) 5289
 Song (Shelley) 6769
 Song for Stout Workers, A 5668
 Song for the New Year, A 5665
 Song in Winter, A 5053
 Song of Little-Oh-Deer, The 4684
 Song of Mary, The 1928
 Song of Sixpence, A (with music) 1961
 Song of the Bow, The 477
 Song of the Little Brown Birds, The (with music) 1004
 Song of the Nightingale, A 848
 Song of the Shirt, The 1837
- Songs and Rhymes with Music :**
 A. B. C. listen to me 129
 Au Clair de la Lune 4441
 Baker's Wife, The 4443
 Billy Pringle had a little pig 6773
 Blow, Blow, thou Winter Wind 5302
 Brave old Duke of York, The 3442
 Come Buy ! Come Buy ! 5300
 Dame Get up and Bake your pie 3571
 Ding Dong Bell 1960
 Doctor Faustus was a Good Man 4571
 Fiddle-Dee-Dee 4933
 Frog He Would A-wooing Go, A 3202
 Girls and Boys Come Out to Play 353
 Goosey Goosey Gander 229
 Great Fun 4441
 Hickory, Dickory Dock 6159
 Hush-a-bye Baby on the Tree Top 4185
 I am chubby, and I'm small 4441
 I had a little Nut-tree 969
 I Saw a Ship A-sailing 101
 I Saw Three Ships Come Sailing 5050
 Il Était une Bergère 4443
 In the Moonlight 4441
 Jack and Jill Went up the Hill 1093
 Je suis un petit poupon 4441
 La Bonne Aventure 4441
 La Boulangerie 4443
 Little Blacky-Tops 6776
 Little Bo-peep 5423
 Little Jack Horner 880
 London Bridge 2334
 Looby Light 2211
 Lover and His Lass, A 6650
 Mulberry Bush, The 6037
 My Lady's Garden 1341
 My Pretty Maid 4936
 North wind doth blow 2959
 Now little children listen unto me 129
 O Dear Sixpence 3815
 O Mistress Mine 5301
 O Willow, Willow 6651
 Old King Cole 5348
 Oranges and Lemons 6528
 Over the Hills and Far Away 3078
 Pan ! Qu'est-ce qu'est la ? 4442
 Piggy Wiggy Wee 6773
 Polichinelle 4442
 Polly Put the Kettle On 605
 Poor Robin 2959
 Poor soul sat sighing 6651
 Punchinello 4442
 Pussy Cat High, Pussy Cat Low 5051
 Pussy-Cat, Where Have You Been ? 4569
 Ride a Cock-Horse 6525
 Shake off Slumber 5300
 Shepherdess, The 4443
 Song of Sixpence, A 2585
 Song of the Little Brown Birds 1004
 Songs from Shakespeare 5299, 6649
 There was a Jolly Miller 4061
 There was a little woman, as I've heard tell 2830
 There was an old woman and what do you think ? 4064
 There were Three Little Kittens 5799
 Three Children Sliding on the Ice 4805
 Warm Hands, Warm, ... 6159
 What do you Think ? 4064
 When That I was a Little Tiny Boy 6652
 Where the Bee Sucks 5299
 Where are you Going to, my Pretty Maid ? 4936
 While you here do snoring lie 5300
 Who is Sylvia ? 6649
- Sophocles**
Greek dramatist (495–406 B.C.)
 Fair Aigeus' son, only to gods in heaven (Antigone) 5185

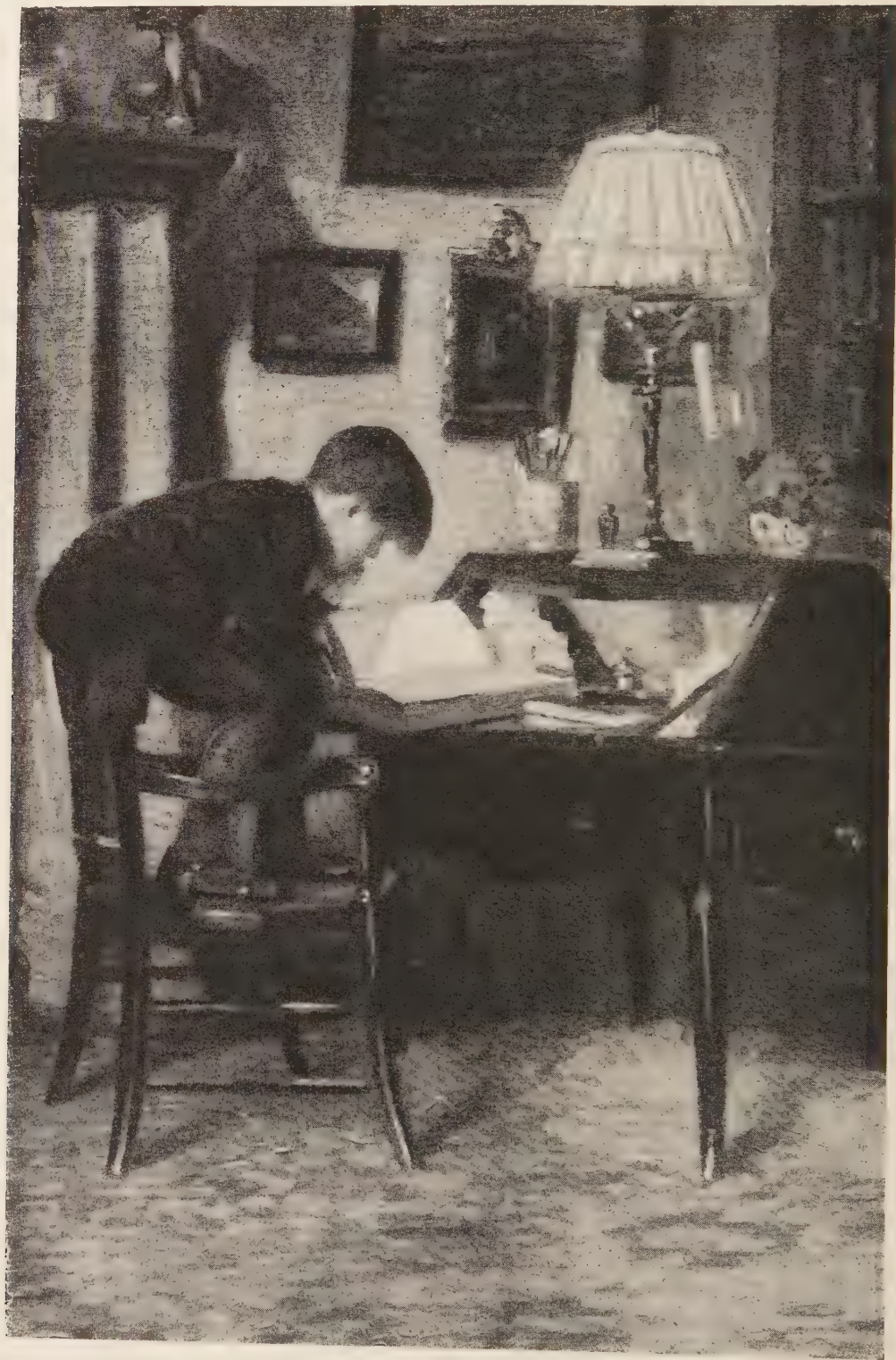
- Soul of Adonais, like a star, The
(Shelley quoted) 2600
- Sound of streams that fast or slow
ound, sound the clarion, fill the
fife 3201
- Sounding cataract haunted me
like a passion, The (Words-
worth quoted) 2474
- South wind brings wet weather . . 5296
- Southey, Robert**
English poet (1774-1843)
Battle of Blenheim, The 3446
Bishop Hatto 4181
Cataract of Lodore, The 3698
Father William 6150
Inchcape Rock, The 6634
Traveller's Return, The 6151
Sower, The 3200
Spacious Firmament on High, The
Spacious times of great Elizabeth,
The (Tennyson quoted) 858
Spare is her head and lean
(Arabian poet quoted) 1898
Speak gently ! It is better far . . 1955
- Spenser, Edmund**
English poet (1552-1599)
Ministry of Angels, The 6894
Sweet is the Rose 4184
- Quotations from Faerie Queene**
After him she rode with so much
speed 5920
And more to lull him in his
slumbers soft 742
Eftsoons they heard a most melo-
dious sound 742
Enforced to seek some shelter
nigh at hand 5919
Fie, fie, faint-hearted knight ! . . 5920
It was an hill placed in an open
plain 5924
Little lowly hermitage it was, A
Until that (whether wicked fate
so framed) 5924
Spider and the Fly, The 1467
Splendour falls on castle walls . . 3440
Spring 4802
Spring is Coming, The 5668
Spring, where are you tarrying
now ? 4574
- Squire, Sir John Collings**
English poet and critic (born 1884)
To a Bulldog 6899
Stanzas on Freedom 4932
Stars, The 357
Stars of midnight shall be dear,
The (Wordsworth quoted) 4034
Stately homes of England, The . . 3812
Stay near me—do not take thy
flight 5790
- Stephens, James**
Irish poet and prose writer (born 1882)
In the Poppy Field 4315
Stern Daughter of the Voice of
God ! 6770
- Stevenson, Robert Louis**
Scottish novelist and poet (1850-1894)
Armies in the Fire 4802
Home No More Home to Me 6768
Land of Nod, The 5792
My Shadow 4929
Requiem 5797
To Tusitala in Vailima 6410
Unseen Playmate, The 6898
World is so full of a number of
things, The (quotation) 240
- Stodart, M. A.**
English writer and educator
Walk in Spring, A 6156
- Stoddard, Richard Henry**
American poet (1825-1903)
Birds 4799
Flight of the Arrow, The 3812
Flight of Youth, The 4184
Stormy Petrel, The 1340
Stranger came one night to Yus-
soul's tent, A 2827
Stream and the Ocean, The 849
Streamlet down from the moun-
tainous glen, The 849
Strenuous day is past, The 99
Strong Son of God, Immortal
Love (Tennyson quoted) 6909
- Stuart, Muriel**
Seed Shop, The 5797
Stupidity Street 849
- Sumer is icumen in 6895
Summer and autumn had been so
wet, The 4181
Summer is coming 3329
Sun does arise, The 1838
Sun is careering in glory and
might, The 733
Sun is down, and time gone by . . 732
Sun was shining on the sea, The . . 2337
Sunset and evening star (Tenny-
son quoted) 3338
Sunshiny shower, A 1724
Suppose the little cowslip should
hang its golden cup 2337
Sur le Pont d'Avignon 7041
- Surrey, Earl of**
English courtier and poet (1517-1547)
Happiest Age, The 6634
Means to Attain a Happy Life . . 4183
Swarm of Bees in May, A 6412
Sweden 5420
Sweet and low, sweet and low . . 2087
Sweet are the thoughts that
savour of content 6407
Sweet Content 5173
Sweet day, so cool, so calm, so
bright 5419
Sweet is childhood; childhood's
over 1094
Sweet is the rose 4184
Sweet to the morning traveller . . 6151
Swift is wheeling and gleaming . . 6892
Swiftly walk o'er the western wave . 4799
- Swinburne, Algernon Charles**
English poet and critic (1837-1909)
Chorus from Atalanta in Calydon . 5914
In a Garden 4190
Match, A 6036
- Symonds, John Addington**
English poet and historian (1840-1893)
Beati Illi 5798
Blame, The 6156
Farewell 6891
Singer, The 6772
Sleep, Baby, Sleep 3936
These Things Shall Be 1718
- Symons, Arthur**
English author and poet (1865-1945)
Amends to Nature 4931
- Tabb, John Banister**
American lyric poet (1845-1909)
Foot Soldiers 6288
Taffy was a Welshman 5296
Talking in their Sleep 5790
- Tannahill, Robert**
Scottish poet (1774-1810)
Midges Dance Aboon the Burn . 4182
- Tate, Nahum**
Poet Laureate and dramatist (1652-1715)
While Shepherds Watched 3941
Tax not the royal saint with vain
expense 6646
- Taylor, Ann**
English writer for children (1782-1866)
My Mother 5295
- Taylor, Bayard**
American poet (1825-1878)
Bedouin Song 4189
- Taylor, Jane**
English writer for children (1783-1824)
Contented John 2711
Good-night 1467
Little Star, The 733
Violet, The 2214
- Taylor, Jefferys**
English writer for children (1792-1853)
Lion and the Mouse, The 3816
Young Mouse, The 2338
- Taylor, Jeremy**
English preacher and poet (1613-1667)
Awake My Soul 3935
Teach me, my God and King 2086
Tears, idle tears, I know not what
they mean 5046
Teeny-Weeny 2207
Tell me not, in mournful numbers
Tell me where is fancy bred
(Shakespeare quoted) 6043
Telling a tale, not too importunate
(William Morris quoted) 4080
Tell-tale Tit 1840
- Tennant, Edward Wyndham**
English poet (1897-1916)
Home Thoughts in Laventie 6644
- I know a Face 6523
- Tennyson, Alfred, Lord**
English poet (1809-1892)
As Through the Land 3440
Beggar Maid, The 2827
Blow, Bugle, Blow 3440
Break! Break! Break! 4315
Brook, The 3567
Charge of the Light Brigade, The . 3440
Come Into the Garden, Maud . . . 3327
Cradle Song, A 851
Crossing the Bar 3338
Days That Are No More, The . . . 5046
Death of the Old Year 3939
Defence of Lucknow, The 4797
Deserted House, The 3327
Eagle, The 3329
England and America in 1782 . . . 6888
Farewell, A 7035
Flower in the Crannied Wall . . . 3326
Home They Brought Her Warrior
In Memoriam (selections) 6909
Kraken, The 4182
Lady Clare 3814
Land that Freedom Chose, The . . . 3326
Maud Singing 3329
Miller's Daughter, The 6156
Ode on the Duke of Wellington
Of Old Sat Freedom on the
Heights 3326
Owl, The 4685
Poet's Song, The 3567
Revenge, The 4437
Sir Galahad 3328
Sweet and Low 2087
Thrush, The 3329
Ulysses 3325
Vision of the Future, A 3329
- Tennyson Quotations :**
Glorious company, the flower of
men, A (The Idylls of the King,
Guinevere) 5495
I, Sir Arthur, saw the Holy
Grail (Idylls of the king, The
Holy Grail) 3286
Let the great world spin for
ever (Locksley Hall) 2752
Spacious times of great Elizabeth
(A Dream of Fair Women) 858
Terrible Ball, The 4686
Test, The 730
- Thackeray, William Makepeace**
English novelist (1811-1863)
At the Church Gate 5177
Cane-bottomed Chair, The 3809
Tragic Story, A 1465
Thank God for Trees 2210
Thanks 2210
Thanksgiving for His House, A . . 6647
That time of year thou mayst in
me behold (Shakespeare
quoted) 6416
- Thaxter, Celia**
American poet (1836-1894)
Sandpiper, The 5043
Then doth he thus address the
queen (Virgil quoted) 5554
Then felt I like some watcher of
the skies (Keats quoted) 5179
Then rose from sea to sky the
wild farewell (Byron quoted) . . . 2598
There are gains for all our losses . 4184
There is a flower, a little flower . . 2336
There is a glorious city in the sea . 5420
There is a Green Hill 5175
There is a hill in England 2958
There is a land, of every land the
pride 6648
There is a rainbow in the sky . . . 6904
There is a tide in the affairs of
men (Shakespeare quoted) 6536
There is an Awful Quiet in the Air . 1092
There is in the wide, lone sea . . . 2710
There is no unbelief 2212
There lived a sage in days of yore . 1465
There once was a bird that lived
up in a tree 6902
There rolls the deep where grew
the tree (Tennyson quoted) 518, 6969
There was a bright and happy
tree 1090
There was a crooked man 6907
There was a fern on the mountain
and moss on the moor 2088
There Was a Frog Lived in a Well . 4186

- There Was a Jolly Miller (with music) . . . 4061
 There was a king in olden days . . . 845
 There was a king met a king . . . 7052
 There was a little boy and a little girl . . . 4808
 There was a little boy went into a field . . . 6094
 There was a little girl . . . 4808
 There was a little man and he had a little gun . . . 6412
 There was a little man, and he had naught . . . 6780
 There was a little man who wooed a little maid . . . 6903
 There was a little rabbit sprig . . . 1840
 There was a little woman, as I've heard tell (with music) . . . 2830
 There was a man, and he went mad . . . 7052
 There was a time when meadow, grove, and stream . . . 7031
 There was an old lady, all dressed in silk . . . 1599
 There was an old man . . . 4935
 There was an old man in a tree . . . 7051
 There was an old man of our town . . . 6906
 There was an old man who lived in a wood . . . 7050
 There was an old woman, and what do you think? (with music) . . . 4064
 There was an old woman lived under a hill . . . 232
 There was an old woman sat spinning . . . 6779
 There was an old woman tossed up in a basket . . . 1096
 There was an old woman who had three sons . . . 1600
 There was an old woman who lived in a shoe . . . 7051
 There was an owl lived in an oak . . . 232
 There was once a little animal . . . 1954
 There were once two cats of Kilkenny . . . 7048
 There were three jovial Welshmen . . . 5548
 There Were Three Little Kittens (with music) . . . 5799
 There were two blackbirds sitting on a hill . . . 6904
 There's a breathless hush in the Close tonight . . . 6151
 There's a dear little home in Good-Children Street . . . 851
 There's a Good Time Coming . . . 1598
 There's a Land, a Dear Land . . . 6156
 There's a little house in a little street . . . 5176
 There's a neat little clock . . . 852
 There's Nae Luck About the House . . . 3568
 There's no dew left on the daisies and clover . . . 1225
 There's Nothing Like a Daddy . . . 7047
 These things shall be! A loftier race . . . 1718
 They Come, Beset by Riddling Hail . . . 6636
 They glide upon their endless way . . . 357
 They grew in beauty side by side . . . 2213
 They say that God lives very high . . . 731
 They that wash on Friday . . . 5545
 They told me, Heracles, they told me you were dead . . . 1721
 They Went to Sea in a Sieve . . . 3572
 They win who never near the goal . . . 5550
 Thing of Beauty, A . . . 6409
 Things That Never Die . . . 4804
 Thirty days hath September . . . 1600
 This England never did, nor never shall (Shakespeare quoted) . . . 981, 6290
 This happy breed of men (Shakespeare quoted) . . . 1928
 This I beheld, or dreamed it in a dream . . . 4314
 This is a stem (Shakespeare quoted) . . . 6290
 This is the house that Jack built . . . 354
 This is the ship of pearl . . . 6155
 This is the summit, wild and lone . . . 6034
 This Life, Which Seems so Fair . . . 3699
 This little pig went to market . . . 4934
 This other Eden, demi-Paradise (Shakespeare quoted) . . . 3637
 This royal throne of kings, this sceptered isle (Shakespeare quoted) . . . 981
 This, this is that same hero whom so oft (Virgil quoted) . . . 5556
 This was the noblest Roman of them all (Shakespeare quoted) . . . 6293
Thomas, Edith M.
American author (1854-1925)
 Talking in their Sleep . . . 5790
 Thomas a Tattamus took two T's . . . 970
Thompson, Francis
English poet (1860-1907)
 All things by immortal power (quotation) . . . 4713
 I do think my tread (quotation) . . . 4714
Thomson, James
Scottish poet (1700-1748)
 Rule, Britannia . . . 4574
Thomson Quotations:
 I care not, Fortune, what you me deny (Castle of Indolence) . . . 2102
 Now 'tis naught but restless hurry through the busy air (The Seasons) . . . 2102
Thomson, James
Scottish poet (1834-1882)
 Give a Man a Horse he can Ride . . . 1716
 William Blake . . . 6888
 Those Evening Bells . . . 4190
 Thou Art, O God . . . 5294
 Thou canst not stir a flower . . . 85
 Thou goest; to what distant place . . . 6891
 Thou, in our wonder and astonishment (Milton quoted) . . . 860
 Thou lingering star, with lessening . . . 6633
 Though I am a king I have no throne . . . 3700
 Though inland far we be (Wordsworth quoted) . . . 2261
 Though the mills of God grind slowly (Longfellow quoted) . . . 517
 Thought, The . . . 6777
 Thousand miles from land are we . . . 1340
 Three Best Things, The . . . 6153
 Three Children Sliding on the Ice (with music) . . . 4805
 Three Fishers went Sailing away to the West . . . 3701
 Three Givers, The . . . 7036
 Three Hills . . . 2958
 Three Jovial Welshmen . . . 5548
 Three Kings, The . . . 3933
 Three kings came riding from far away . . . 3933
 Three little words you often see . . . 5800
 Three Old Ladies, The . . . 1599
 Three poets, in three distant ages born . . . 1596
 Three Wise Men of Gotham . . . 5049
 Three Years She Grew . . . 6151
 Thrush, The . . . 3329
 Thy People, Lord, Are We . . . 3813
 Thy Way, Not Mine, O Lord . . . 5792
Ticknor, Francis Orerry
American doctor and author (1822-1874)
 Little Giffen . . . 2582
 Tide Rises, the Tide Falls, The . . . 2459
 Tiger, The . . . 3700
 Tiger, tiger, burning bright . . . 3700
 Till We Have Built Jerusalem . . . 6767
Tilton, Theodore
American poet (1835-1907)
 All Things Shall Pass Away . . . 5173
 Time . . . 3568
 Time draws near the birth of Christ, The (Tennyson quoted) . . . 6911
 Time, You Old Gipsy Man . . . 2582
 Time's glory is to calm contending kings (Shakespeare quoted) . . . 859
 Tinker Out of Bedford, The . . . 3569
 Tintern Abbey . . . 6631
 Tis a lesson you should heed . . . 100
 Tis all the way to Toe-town . . . 6288
 Tis sweet to hear the merry lark . . . 848
 Tis the last rose of summer . . . 4066
 Tit-Tat-Toe . . . 4935
 To a Bulldog . . . 6899
 To a Butterfly . . . 4568, 5790
 To a Mountain Daisy . . . 846
 To a Mouse . . . 6897
 To a Nightingale . . . 6154
 To a Skylark (Shelley) . . . 6281
 To a Skylark (Wordsworth) . . . 6889
 To a Waterfowl . . . 226
 To a Young Genius . . . 1719
 To Althea, from Prison . . . 6405
 To Anthea . . . 1839
 To be a queen in bondage is more vile (Shakespeare quoted) . . . 6536
 To be, or not to be, that is the question (Shakespeare quoted) . . . 6533
 To Bethlehem did they go, the Shepherds three . . . 3936
 To Carlo . . . 5042
 To Celia . . . 6410
 To draw no envy, Shakespeare, on thy name . . . 5794
 To Exiles . . . 6778
 To gild refined gold, to paint the lily (Shakespeare quoted) . . . 6536
 To join the ages they have gone . . . 5048
 To make your candles last for aye . . . 6780
 To market, to market, to buy a fat pig . . . 6904
 To Mary in Heaven . . . 6633
 To Meadows . . . 6892
 To My Friends Become Ministers . . . 604
 To My Mother's Memory . . . 6034
 To my true king I offered, free from stain . . . 4316
 To Night . . . 4799
 To one who has been long in city pent . . . 3699
 To Robin Redbreast . . . 6645
 To see the world in a grain of sand (Blake quoted) . . . 4088
 To the Cuckoo (M. Bruce) . . . 968
 To the Cuckoo (Wordsworth) . . . 7036
 To the Lord General Cromwell . . . 2960
 To the Memory of My Beloved Master, William Shakespeare . . . 5794
 To the Moon . . . 6522
 To the Skylark (Wordsworth) . . . 6150
 To the Small Celandine . . . 6898
 To Thee, our God, we fly . . . 3813
 To Thee whose eye all Nature owns . . . 6891
 To Tusitala in Vailima . . . 6410
 Today (anonymous) . . . 4802
 Today (Carlyle) . . . 6405
 Tolerance . . . 6155
 Toll for the brave . . . 2709
 Tom! are you still within this land? . . . 1595
 Tom Bowling . . . 731
 Tom he was a piper's son (with music) . . . 3078
 Tom Thumb's Alphabet . . . 5672
 Tom Woodgate . . . 1595
 Tommy Trot, a man of law . . . 6779
 Tomorrow, and tomorrow, and tomorrow (Shakespeare) . . . 1107, 6168
 Tomorrow to fresh woods and pastures new (Milton quoted) . . . 1234
 Top it hummeth a sweet, sweet song, The . . . 850
 Topsy-Turvy World . . . 3572
 Torch of Life, The . . . 6151
 Toussaint, the most unhappy man of men (Wordsworth quoted) . . . 898
 Toys, The . . . 6641
 Tragic Story, A . . . 1465
Traherne, Thomas
English poet and writer (1636-1674)
 Wonder . . . 2210
 Travellers . . . 1717
 Traveller's Return, The . . . 6151
 Trees . . . 6895
Trench, Richard Chenevix
English archbishop and poet (1807-1886)
 Kingdom of God, The . . . 5054
 Triplets of Little . . . 6641
 True Greatness . . . 731
 True Growth . . . 2087
 True Men . . . 2206
 Trust in God and Do the Right . . . 966
 Try Again . . . 100
 Tubal! Cain . . . 1953
Turner, Charles Tennyson
English poet (1808-1879)
 Letty's Globe . . . 7046
 Little Sophy by the Sea . . . 2336
Turner, Elizabeth
English writer for children (1774-1846)
 Greedy Boy, The . . . 2711
 Twas a Funny Little Fellow . . . 6160
 Twas in the prime of summer time . . . 6401
 Twas on a summer morning . . . 3702
 Twas then that great Marlborough's mighty soul (Addison quoted) . . . 1731

- Tweedledum and Tweedledee .. 6905
Twells, H.
English clergyman (1823-1900)
 At Even, Ere the Sun was Set .. 5552
 Twelve-Forty-Five, The .. 6889
 Twelve Huntsmen .. 5800
 Twilight Song, A .. 478
 'Twill make me think the world is
 full of rubs (Shakespeare) .. 5615
 Twinkle, twinkle, little star .. 733
 Twins, The .. 6639
 Two Armies, The .. 5791
 Two Little Boys Named Willie .. 100
 Two little dogs were basking .. 4807
 Two little feet, so small that both
 may nestle .. 6288
 Two little girls are better than
 one .. 1599
 Two little kittens, one stormy
 night .. 1964
 Two Merry Men .. 4063
 Two Rivers .. 5911
 Two sticks and an apple .. 4935
 Two Wagons .. 2828
 Would ring the bells of Heaven .. 7035
Tyerman, Nelson Rich
English schoolmaster (1859-1899)
 In a Devon Valley .. 1717
 Ugly Princess, The .. 2086
 Ulysses .. 3325
 Uncle Simon he .. 1724
 Under a spreading chestnut tree .. 4680
 Under the greenwood tree (Shake-
 speare quoted) .. 984
 Under the wide and starry sky .. 5797
 Underneath this sable hearse .. 3810
 Undying, The .. 6523
 Unfading Beauty, The .. 5420
 Unseen Playmate, The .. 6898
 Up at a villa—Down in the City .. 3438
 Up from the meadows rich with
 corn .. 4679
 Up the airy mountain .. 732
 Up with me! up with me into the
 clouds! .. 6889
 Up-Hill .. 1839
 Upon a Sabbath day it fell .. 6406
 Upon a time a neighing steed .. 849
 Upon yon nearest rock-top .. 734
 Upright Life, The .. 1092
 Useful Plough, The .. 4803
 Vagabond, The .. 6404
 Vague mystery hangs on all these
 desert places .. 4439
Van Dyke, Henry
American clergyman (1852-1933)
 God Sends Love To You .. 1340
 Henry Hudson's Last Voyage .. 5287
 House of Life is Yours, My Dear
 Mile with Me, A .. 6890
 Three Best Things, The .. 6153
Vaughan, Henry
Welsh poet (1622-1695)
 Peace .. 4801
 Vision, A .. 3082
 Venice (S. Rogers) .. 5420
 Venice (Wordsworth) .. 6892
 Vex not his Ghost! (Shakespeare
 quoted) .. 1107, 6170
 Vicar of Bray, The .. 5176
 Village Blacksmith, The .. 4680
 Violet, The .. 2214
Virgil : Quotations from the Aeneid :
Roman poet (70-19 B.C.)
 And he shall call the Romans by
 his name .. 5554
 Arms and the man I sing, who
 first from Troy .. 5553
 Before the door—the opening jaws
 of hell .. 5556
 Brief words shall fit the case .. 5555
 Carthage, an ancient State which
 settlers held .. 5553
 I was mad to welcome him, a
 shipwrecked mariner .. 5556
 Oh, clear your hearts of dread,
 and banish care! .. 5554
 O thou, whose everlasting sway
 controls .. 5554
 What spot, Achates, or what land
 on earth .. 5554
 Virtue .. 5419
 Vision, A .. 3082
 Vision of Belshazzar, The .. 1722
 Vision of the Future, A .. 3329
 Voice by the cedar tree, A .. 3329
 Voice of Spring, The .. 4574
 Voice of the Grass, The .. 227
 Voiceless, The .. 6777
 Wake, O Earth .. 3936
 Waken, lords and ladies gay .. 6036
 Walk in Spring, A .. 6156
 Wall and gulf for ever lie, A .. 6890
 Walrus and the Carpenter, The .. 2337
 War Song of Dinas Vawr, The .. 6647
 Warden of the Cinque Ports
 The .. 5669
 Warm Hands, Warm (with music) .. 6159
Warner, Susan (Eliz. Wetherell)
American novelist (1819-1885)
 Jesus Bids Us Shine .. 1226
 Wash me and comb me .. 970
 Wasp met a bee, A .. 7048
Watson, Sir William
English poet (1858-1935)
 Churchyard in the Wold, The .. 1720
 In Dreams .. 2828
 Old Yew .. 6523
 On a Little Lady's Third Birth-
 day .. 7042
 On a People's Poet .. 6893
 Three Givers, The .. 7036
 To My Mother's Memorv .. 6034
Watts, Isaac
English clergyman (1674-1748)
 King of Kings, The .. 3935
 O God, our Help in Ages Past .. 3082
Waugh, Benjamin
English writer (1839-1908)
 Where is Jesus? .. 4444
Waugh, Edwin
English poet (1817-1890)
 Christmas Morning .. 3938
 Way down upon de Swanee
 Ribber .. 4440
 Way was long, the Wind was
 cold .. 6896
 We are all in the dumps .. 971
 We are come back from Babylon .. 5670
 We are much honoured by your
 choice .. 6636
 We are not free .. 7033
 We are the Dreamers of Dreams .. 6524
 We are the music-makers .. 6524
 We count the broken lyres .. 6777
 We Have Been Friends To-
 gether .. 3081
 We have come far: it seems that we
 were sent .. 1717
 We live in deeds, not years .. 352
 We Must be Free or Die .. 6769
 We plough the Fields and Scatter
 We shan't see Willie any more,
 Mamie .. 6899
 We twa hae run about the braes
 (Burns quoted) .. 2224
 Weather Wisdom .. 5800
Weatherly, Frederic E.
English song writer (1848-1929)
 Miss Poppy .. 3702
 River, The .. 5054
 What Bobbie Would Like .. 1095
 What Might Have Been .. 733
 Weave a circle round him thrice
 (S. T. Coleridge quoted) .. 3957
Webster, John
English dramatic poet (1580-1625)
 Land Dirge, A .. 5662
 Wee, modest, crimson-tipped
 flower .. 846
 Wee Shemus was a misdropt man .. 6778
 Wee, sleekit, cow'rin', tim'rous
 beastie .. 6897
 Wee Willie Winkie .. 2460
 Weighing the Baby .. 6190
 Welcome, wild North-easter! .. 6409
 We're the twins from Aunt
 Marinn's .. 6639
 Were half the power that fills the
 world with terror .. 2087
Wesley, Charles
English preacher (1707-1788)
 Gentle Jesus, Meek and Mild .. 733
 Jesu, Lover of my Soul .. 4685
 West London .. 6405
 Westminster Bridge .. 3201
 Wet sheet and a flowing sea, A .. 1597
 What are little boys made of? .. 7051
 What Bobbie Would Like .. 1095
 What Can a Little Chap Do? .. 5797
 What Can I Give Him? .. 3935
 What Can the Matter Be? .. 7048
 What care I how black I be? .. 1600
 What Do You Think (with music) .. 4064
 What does little birdie say .. 851
 What have I done for you? .. 5667
 What I Live For .. 227
 What I shall leave thee none can
 tell .. 6285
 What is it you ask me, darling? .. 5798
 What is the news of the day? .. 852
 What is the rhyme for porringer? .. 1840
 What is this life, if full of care .. 6768
 What is this, the sound and
 rumour .. 4314
 What Might Have Been .. 733
 What needs my Shakespeare
 (Milton quoted) .. 1231
 What of the bow? .. 477
 What passion cannot music raise
 and quell? (Dryden quoted) .. 1610
 What stronger breast-plate than a
 heart untainted (Shakespeare
 quoted) .. 6536
 What the Stars Have Seen .. 2583
 What's in a name? (Shakespeare
 quoted) .. 6229
 What's the news of the day? .. 6904
 When a deed is done for free-
 dom .. 5543
 When all the world is young,
 lad .. 1955
 When Britain first, at Heaven's
 command .. 4574
 When cats run home and light is
 come .. 4685
 When children are playing alone .. 6898
 When country roads begin to
 thaw .. 5668
 When Darby saw the setting sun .. 2214
 When darkness did his journey
 mar .. 2828
 When'er a noble deed is wrought .. 6635
 When Eve had led her lord away .. 2583
 When fishes flew and forests
 walked .. 6887
 When Good King Arthur Ruled .. 5800
 When I am Dead, my Dearest .. 6404
 When I Am Gone .. 1718
 When I consider how my light is
 spent (Milton quoted) .. 1355
 When I Have Fears .. 5418
 When I have seen by Time's fell
 hand defaced (Shakespeare
 quoted) .. 6415
 When I was a bachelor .. 6780
 When I was a beggarly boy .. 966
 When I was a farmer, a farmer's
 boy .. 1957
 When I was a little boy .. 102
 When icicles hang by the wall
 (Shakespeare quoted) .. 980
 When in the chronicle of wasted
 time .. 6416
 When Jacky's a very good boy .. 6412
 When Letty had scarce passed her
 third glad year .. 7046
 When little Fred was called to
 bed .. 1724
 When little Sammy Soapsuds .. 231
 When love arose in heart and
 deed .. 5422
 When love with unconfin'd wings
 is falling .. 6405
 When our babe he goeth walk-
 ing .. 4314
 When Spring comes back to
 England .. 6407
 When sycamore leaves wer a-
 spreaden .. 4575
 When that Aprillé with his showres
 soot (Chaucer quoted) .. 364
 When That I was a Little Tiny Boy
 (with music) .. 6652
 When the British warrior queen .. 968

- When the green woods laugh with the voice of joy . . . 358
 When the Present has latched its postern behind my tremulous stay . . . 6769
 When the sheep are in the laud . . . 5552
 When the voices of children are heard on the green . . . 1955
 When the wind is in the East . . . 6412
 When thou dost eat from off this plate . . . 967
 When to the sessions of sweet silent thought (Shakespeare quoted) . . . 6414
 When wilt Thou save the people? . . . 1340
 When You and I Behind the Veil (Omar Khayyam quoted) . . . 5676
 When You Are Old (W. E. Henley) . . . 5551
 When You Are Old (W. B. Yeats) . . . 6893
 Where are the swallows fled? . . . 4930
 Where are you going, Great-Heart? . . . 5177
 Where are you going to, my pretty maid? (with music) . . . 4936
 Where did you come from, baby dear? . . . 4316
 Where do you come from, river sweet? . . . 5054
 Where is Jesus? . . . 4444
 Where is the true man's fatherland? . . . 4183
 Where Lies the Land? . . . 5666
 Where the bee sucks, there suck I (Shakespeare quoted) 1108;
 with music . . . 5299
 Where the pools are bright and deep . . . 2213
 Where the sea-beasts, ranged all round . . . 906
 Where 'twas our wont to ride while day went down (Shelley) . . . 2599
 Which is the way to Babyland? . . . 6288
 While rain, with eve in partnership . . . 6771
 While shepherds watched their flocks by night . . . 3941
 While you here do snoring lie (Shakespeare quoted) 6296;
 with music . . . 5300
- White, Joseph Blanco**
English theologian and poet (1775-1841)
 Night and Death . . . 4066
- White dove sat on the castle wall . . . 970
 Whither, midst falling dew . . . 226
- Whiting, William**
English choirmaster (1825-1878)
 Eternal Father, Strong to Save . . . 3565
- Whitman, Walt**
American poet (1819-1892)
 O Captain! My Captain! . . . 5294
- Whittier, John Greenleaf**
American poet (1807-1892)
 At Last . . . 4314
 Barbara Frietichie . . . 4679
 Maud Müller . . . 2457
 My Playmate . . . 5418
- Whittier Quotations :**
 I know not where his islands lift . . . 4203
 Let the thick curtain fall . . . 6960
- Who Bides His Time . . . 6637
 Who Comes Here? . . . 5918
 Who fed me from her gentle breast? . . . 5295
 Who is Sylvia? (Shakespeare quoted) 980; with music . . . 6649
 Who Killed Cock Robin? . . . 606
 Who stands upon the mountain's crest? . . . 6888
 Who stuffed that white owl? . . . 4317
 Who Trusts in God? . . . 2212
 Who will say the world is dying? . . . 5291
 Whose dwelling is the light of setting suns (Wordsworth) . . . 3280
 Why do you laugh, little brook? . . . 3810
 Why does the chilling winter's morn . . . 3935
 Why is Pussy in bed? . . . 1468
 Why shrinks the soul back on herself? (quotation) . . . 1237
 Why sitt'st thou by that ruined hall? . . . 3568
 Why weep ye by the tide, ladie? . . . 3813
- Wilcox, Ella Wheeler**
American poet and essayist (1855-1919)
 I Am . . . 5044
 Little Kids . . . 2210
 My Ships . . . 6635
 One of Us Two . . . 5291
 Wishing . . . 851
 You Never Can Tell . . . 3810
 Wild Flower Alphabet, A . . . 5424
 Will you walk into my parlour? . . . 1467
- Willard, Emma**
American educationist (1787-1870)
 Rocked in the Cradle of the Deep . . . 4060
- William Blake** . . . 6888
- Williams, Alfred**
English poet and essayist (1877-1930)
 In Donegal . . . 1718
 Mother . . . 2828
 Willie's Lodger . . . 100
 Willy boy, where are you going? . . . 1468
- Wilson, Marjorie**
English poet (died 1934)
 December 31, 1933 . . . 1717
 Memory, A . . . 1717
 Old Woman in the Attic, The . . . 2828
 Travellers . . . 1717
 Undying, The . . . 6523
 Wilt thou leave the lambs? . . . 6403
 Wind and the Moon, The . . . 1715
 Wind came up out of the sea, A . . . 3942
 Windmill, The . . . 3076
 Winter Evening, A . . . 5177
 Wish, A (S. Rogers) . . . 1346
 Wish, A (A. Cowley) . . . 6283
 Wishing (W. Allingham) . . . 1723
 Wishing (E. W. Wilcox) . . . 851
 With a Copy of Herrick . . . 5047
 With fingers weary and worn . . . 1837
 With proud thanksgiving, a mother for her children . . . 7042
- Wither, George**
English poet and satirist (1588-1667)
 Farewell . . . 3697
 Within the Jersey City Shed . . . 6889
 Woak Hill . . . 4575
- Wolfe, Charles**
Irish clergyman and poet (1791-1823)
 Burial of Sir John Moore, The . . . 1465
 Woman was old and ragged, The . . . 3702
 Wonder . . . 2210
 Wondrous Wise . . . 6906
 Wood Fires . . . 2209
 Woodman, Spare that Tree . . . 6900
- Word of God to Leyden Came, The** . . . 6648
- Wordsworth, Dorothy**
English poet (1771-1855)
 Cottager to Her Infant, The . . . 4686
- Wordsworth, William**
English poet (1770-1850)
 Blind Highland Boy, The . . . 4931
 Daffodils, The . . . 6887
 Inside King's College Chapel . . . 6646
 It is a Beauteous Evening . . . 6645
 Kitten and the Leaves, The . . . 3330
 Loud is the Vale . . . 6768
 Lucy . . . 3568
 Lucy Gray . . . 5053
 March . . . 4799
 My heart leaps up when I behold . . . 2474
 Ode on Immortality . . . 7031
 Ode to Duty . . . 6770
 Reaper, The . . . 5054
 She was a Phantom of Delight . . . 6408
 Sleep . . . 2458
 Sonnet to Milton . . . 1358
 Toussaint L'Ouverture . . . 898
 Three Years She Grew . . . 6151
 Tintern Abbey . . . 6631
 To a Butterfly . . . 4568, 5790
 To a Skylark . . . 6889
 To the Cuckoo . . . 7036
 To the Skylark . . . 6150
 To the Small Celandine . . . 6898
 Venice . . . 6892
 We Must be Free or Die . . . 6769
 Westminster Bridge . . . 3201
 World is Too Much With Us, The . . . 7043
- Wordsworth Quotations :**
 Blest be the song that brightens 1269
 Bliss was it in that dawn to be alive (The Prelude) . . . 2472
 Bodily eyes were utterly forgotten . . . 3958
 In a world of life they live . . . 3958
 It was a cove, a huge recess . . . 464
 Love had he found in huts where poor men lie . . . 465
 Moon doth with delight, The . . . 2473
 My heart leaps up when I behold . . . 2476
 Sounding cataract (Tintern Abbey) . . . 2474
 Stars of midnight shall be dear . . . 4034
 World, The . . . 1839
 World goes up and the world goes down, The . . . 5798
 World in all doth but two nations bear, The (Marvell quoted) . . . 88
 World is so full of a number of things (Stevenson quoted) 240, 1769
 World Is Too Much With Us, The . . . 7043
 World that was ere we were born, The (quotation) . . . 2526
 World's Age, The . . . 5291
 World's May Queen, The . . . 6407
 Worm, The . . . 100
 Worm and footsore was the Prophet . . . 6286
- Wotton, Sir Henry**
English diplomat and poet (1568-1639)
 Character of a Happy Life, The . . . 4803
 Picture of a Happy Man . . . 1720
 Wreck of the Hesperus, The . . . 5171
 Written in a Child's Book . . . 4802
- Wyatt, Sir Thomas**
English poet (1503-1542)
 And Wilt Thou Leave Me Thus ? . . . 4802
 Wynken, Blynken, and Nod . . . 6772
- Ye banks and braes and streams around** . . . 5294
Ye banks and braes o' bonnie Doon . . . 5174
Ye have been fresh and green . . . 6892
Ye Little Birds that Sit and Sing . . . 6287
Ye Mariners of England . . . 5293
Ye sons of France, awake to glory . . . 4685
Year's at the Spring, The . . . 6900
- Yeats, William Butler**
Irish poet and prose writer (1865-1939)
 Lake Isle of Innisfree . . . 6894
 When You Are Old . . . 6893
 Yes, threadbare seem his songs . . . 6893
 Yestreen, when to the trembling string (Burns quoted) . . . 2222
 You are going out to tea today . . . 4188
 You are old, Father William . . . 6150
 You ask me why, though ill at ease . . . 3326
 You know we French stormed Ratisbon . . . 1345
 You Never Can Tell . . . 3810
 You see merry Phyllis, that dear little maid . . . 4807
 You shall have an apple . . . 1724
 You think I am dead . . . 5790
 You will grow old ; ah yes, my sweet . . . 1718
- Young, Sir Hilton (Lord Kennet)**
English sailor and poet (born 1879)
 Boy was Born at Bethlehem, A . . . 5667
 Young and Old . . . 1955
 Young Ben he was a nice young man . . . 7045
 Young lambs to sell I . . . 7051
 Young Lochinvar . . . 2707
 Young Mouse, The . . . 2338
 Young Sophy leads a life without alloy . . . 2336
 Your Mission . . . 4931
 Yussouf . . . 2827
- Zun can zink, the stars mid rise . . . 4576

THE SEEKER AFTER KNOWLEDGE



THE BOOK, BY HENRI MORISSET
7218

INDEX TO THE CHILDREN'S ENCYCLOPEDIA

This Index will guide you to whatever you want in this book. If you want something about the Sun, turn to S and find the word Sun. Many subjects are indexed many times. It is best to look under any heading you can think of until you find it.

The order of the Index is strictly alphabetical, every phrase, or title of a book or story, counting as one word. The key-word or phrase comes first in black type, the main article on the subject follows immediately, and then come references scattered throughout the work. All pages referring to reading matter are in **Black type**. Pictures and maps come next with the page figures in light type, and at the end of the group is an indication where to look for extra information.

A phrase is indexed under its first word ; Act of God is under Act.

Saints are under their names, but a town like St. John's is under St. John's.

In indexing titles such words as **The** and **A** are omitted ; The Comedy of Errors is under C. The words **Common** and **Wild** are also ignored.

Think of what you want and look under the most important word. If you want a man look under his name. If you want a country look under its name. If you want a story and do not remember the title look under Stories. For Poetry see Poetry Index on page 7199

- Aachen, Germany: see Aix-la-Chapelle
Aalborg, Danish port, 5149, 5163
A-An-Hi-Pad-Da, King of Ur, inscriptions found, 6871
Aanrud, Hans, Norwegian novelist, 4941
Aard-vark, or ant bear, habits, 2278 pictures, 2271, 2275
Aard-wolf, characteristics, 420 picture, 416
Aarhus, Danish port, 5149
Aaron, appointed High Priest, 1241 went with Moses to Egypt, 1118 chosen as Great High Priest, 1239 death, 1243
Aar River, Switzerland, 4666
Abacus, ancient adding machine, 6840
Abacus, architectural term, 5497
Abadan, city of Persia, 6385
Abana River, Syria, 2727
view of, at Damascus, 3463
Abbal, André, French sculptor, 4648
Abbas I, The Great, Persian shah, 6390
Abbey, Edwin A., American artist, 3288
O Mistress Mine, painting, 3657
Vision of the Holy Grail, painting, 6947
Abbey: see Monastery
Abbey Craig, view near Stirling, 1337
Abbotsford, house built by Sir Walter Scott, 2011
Abbott, Mary, Romney's wife, 5700
Abbreviations, commonly used, 7066
A B C of Cookery, with picture, 507
Abdul Aziz al Saud, acknowledged king of Western Arabia in 1926, 6264
Abdullah, king of Transjordan, 6270
Abednego, cast into the fire by Nebuchadnezzar, 3101
Abel, life-story, 375
Abéard, Pierre, French theologian and monk, 1387
Abele tree: see White poplar
Abercrombie, Lascelles, English poet, 4082
Aberdeen, Scottish city and port, Marischal College, designed by Marshall-Mackenzie, 6472
Pictures of Aberdeen
coat-of-arms of the city, in colour, 4990
general view, 1336
granite quarry, 5853
Old Machar Church, 1338
Robert Burns statue, 1338
Aberdeen-Angus cattle, introduced into North America, 1154
bull, 1160
Aberdeen University, arms in colour, 4989
Abergele, Gwrych Castle, 1462
Aberglaslyn Pass, view, 844
Aberystwith, Wales, general view, 1460
source of River Wye, 1461
Abide with me, story of hymn, 1760
Abiema, Gilbert Islands' capital, 3428
Abimelech, made himself king of Israel, 1366
Abiram, rebel against Moses and Aaron, 1242
Aborigines, of Australia, 2446 pictures, 2084, 2445
Abraham, life-story, 621
excavations at Ur, his birthplace, 6267
in Egypt, 6876
sculpture by Donatello, 4523
fifteenth-century picture, in colour, 492
Hagar and Ishmael dismissed by, 623
mosque over tomb of, 3469
Abalsom, rebellion and death, 1988
tomb of, 3466
Abalsom and Achitophel, satire by Dryden, 1610
Absentee, The, novel by Maria Edgeworth, 2350
Abson, Dr. Karl, discoverer of wingless flies, 6090
Absolute value, meaning, 1237
Absolute Zero, attempts to reach, 5320, 6314
Abu-Simbel, temple by Nile, 5380
pictures, rock temple, 5382-3
Abydos, temple on the banks of Nile, 5380, 6860, 6868
Abyssinia, or Ethiopia, 6754
Italian occupation, 1942
James Bruce's adventures in, 2998
flag, in colour, 6973
map, in colour, 7098
mud huts at Sokota, 6751
Abyssinian epauletted bat, 290
Abyssinian ground hornbill, 3255
Abyssinian maned sheep, 1279
Acacia, gum arabic obtained from, 2937
Acacia, false, flowers and leaves, 4037
Academy, how did academics begin ? 4387
Acanthodians, great sharks of the Devonian Age, 1136
Acanthus leaf, why is the acanthus leaf used so much in building ? 1414
Acapulco, Mexican port, 7007
Acceleration, of falling body, 4835
Accident, what to do in case of accidents, 6178
Accidents, Royal Society for the Prevention of, 561
Accipitres, birds of prey, 3625
Accra, Gold Coast capital, 3318, scene, 3322
Accumulators, description, 735, 1852
electricity storage, 1348, 3944
grids, various types, 736
chemical action in, 1352
Acelanda, view, 3466
Acer, genus of order Acerineae, 6492
Acetylene gas, how obtained, 4470
uses, 1298
Acachaeans, in Hittite chronicles, 6871
Achene, in botany, 6495
Acheron, river of Hell, 3581, 6930
Achilles, his story in the Iliad, 5303
recognised by Ulysses, ancient Greek painting discovered in Italy, 324
Achill Island, Ireland, 3062
cathedral cliffs at, 2006
Achimota, Gold Coast town, 3318, college, 3030
Achray Loch, Perthshire, 1335, 2131
Acid, effects of powerful acids, 4348
nature of, 1933, 4347, 6424
See also names of acids
Aconcagua, mountain in the Andes, 5820, 7005
Aconitum, genus of order Ranunculaceae, 6491; winter flower, 6384
Acorn: see Oak tree
Acre, port of Palestine, 6269, 6278
Acre, square measure, 7069
square feet conversion tables, 7072
Acrid lettuce, flower, in colour, 4287
Acroclinium, flower, 6382
Acropolis, Athens, Elgin Marbles rescued, 4666
what is the Acropolis ? 6725
Pictures of the Acropolis
buildings on, 5505-6, 5508, 5510
distant views, 5765, 5778-9
Socrates watching people pass by, 5821
See also Athens; Parthenon
Acropolis Hill, Petra, 6277
Across the Fire, painting by Verestchagin, 3398
Acting, plays at home, 5561
Acting proverbs, game, 3848
Actinium, an element, 4222
Act of God, what does it mean ? 5387
Act of Parliament, how it is made, 4537
judge's decision may change original intention of, 4774
Statute Law, 4773, 4901
Actonilite, form of asbestos, 1303
Ada, Lake, New Zealand, 2703
Adam, banished from Eden, 248, 246
Creation of Adam, picture by Michael Angelo, 690
Adam House, London, designed by Michael Rackliss, 4230
Adam, James, architect, 6471
Adam, Robert, architect, 3860, 6471
portrait, 3855
Adam, William, architect, 6471
Broadlands dairy designed by, 6252
Adams, Andy, American writer, 4335
Adams, C. H.: see Poetry Index
Adams, Francis, Australian poet, 4206
Adams, James Truslow, American historian, 4336
Adams, John Couch, his discovery of Neptune, 987, 3358
Adams, John Quincy: see Poetry Index
Adams, Sarah Flower, hymn writer, 1758; see also Poetry Index
Adam's apple, what it is, 5245
Adapa, how he broke the wind's wings, 1275
Adare, Cape, Antarctica, 6550
Adcock, A. St. John: see Poetry Index
Addax, African antelope, 1400
Adder, or viper, characteristics, 4620
crawling, 4619
picture, in colour, facing 4469
See also Viper
Adder in a Burning Bush, fable, 6934
Adder's tongue, fern, in colour, 1798-9
Adding machine, who made the first adding machine ? 6840
how it works, 6841

Addis Ababa, capital of Abyssinia, 6754
 Addison, Joseph, English essayist and poet, 1730
 dictating essay to Steele, 1731

See also Poetry Index

Adelaide, capital of South Australia, description, 2574

King William Street, 2578

near Waterfall Gully, 2571

Adelaide Island, discovered, 6550

Adelboden Valley, Alps, 4673

Adelie Land, named by D'Urville, 6550

Adelie penguin, method of landing, 4002

pictures, 4001

Adelphi, London, built by the Adam brothers, 6471

Inigo Jones's water-gate, 1220

Aden, British Crown Colony in Arabia, 3420, 6265

what are the rain-tanks at Aden? 5620

Pictures of Aden

British officer inspects a cistern, 2082

huge rain tanks, 3434

native children at play, 3436

tombs of local saints, 3429

views, 3434-5

Adige, river of Northern Italy, 4910

Adjective, man's invention of adjectives, 1853

Adjuvant stork: see Marabou

Admetus, King, Apollo flies to, 3516

story of, 6937

Administration of Estates Act (1925), its provisions, 6258

Admiral's Breeches, story, 2142

Admiralty, London, built in 18th century, 4230

flags, in colour, 6965-66

views of building, 1217, 6476

Admiralty Arch, London, 4230, 1216

Adonais, elegy on John Keats by Shelley, 2598

Adonis blue butterfly: see Clifden blue butterfly

Adoption of Children Act (1926), its provisions, 6254

Adoration, early French picture of Avignon school, 1058

Adoration of the Child, painting by Gerard David, 1054

painting by Hans Memling, 1055

painting by Perugino, 1663

Adoration of the Lamb, Hubert van Eyck's altar piece, 1052, 1053

Adoration of the Magi, Dürer's painting at Florence, 1193, 1186

fine specimen of work of Giovanni Battista Tiepolo, 935

Gentile Bellini's painting in National Gallery, 932

Gentile da Fabriano's painting at Florence, 825

Gerard David's painting in the National Gallery, 1057

Stephen Lochner's famous picture in Cologne Cathedral, 1185

painting by A. Edelfeldt, 3588

Adoration of the Shepherds, painting by José Ribera, 1311

painting by Van der Goes, 1053

Adoration of the Wise Men: see Adoration of the Magi

Adreanaun, synthetic, 4348

Takamino discovers, 4472

what it is and what it is used for, 8175

Adriana, in Comedy of Errors, 6041

Adullam, Cave of, 3467

Adventure, its spirit and aim, 493

Adventures of Reynard the Fox, story, 5219

Adventurous Simplicissimus, tale by Grimmelshausen, 4696

Advertising, electric signs, 1100

Aeacus, mythological judge of the dead, 3532, 6930

Aegean Architecture: see Architecture, Pelagic

Aegean Art, the art that paved the way to Greek art, 4023

Aegeon, in Comedy of Errors, 6040

Aegina, school of Greek art at, 4028

sculptured head, 4029

Temple of Aphaia: see Aphaia

Aegion, Greece, bronze lamp-stand from, 6985

Aemilia, in Comedy of Errors, 6040

Aeneas, hero of Virgil's Aeneid, 5553

relating misfortunes of Troy, 5553

Aeneid, The, Virgil's Grea' Epic, 5553

horse of Troy, 5555

Aeolus, mythological King of the Winds, 3519

statue by Giovanni Bologna, 4530

Aerial: see Wireless and Radar

Aerology, what it is, 6721

Aeronautics: see Aeroplane, Air Mail, Airman, Airscrew, Airship, Flying.

Zeppelin, Civil Aviation, and so on

Aeroplane, how it flies, 4577

Airways Terminal, London, 429

bombing raids in World Wars, 1710

1942, 1945

dry ice dropped on clouds to produce rain, 3395

equilibrium the great problem, 5075

jet propulsion speeds, 4810

Langley's man-carrying type, 22

Langley's steam-driven model (1896), 22

manufacture described, 6337-42

petroleum fields search, 2963

pilot's cockpit described, 4692

pioneers of the industry, 4111

Roger Bacon foretells, 3508

voyage in airliner described, 429-31

Wonder Questions

can it stand still in the air? 6230

how fast does an aircrew move? 6346

is the wind ever too strong for an aeroplane? 5002

Pictures of Aeroplanes

airliner crew at work, 4693

Airways, picture-story, 432-8

Airways Terminal, London, 430

flying-boats, 431, 435, 438, 4688

gas-turbine engine, sectional drawing, 4694

helicopter, 4687; sectional drawing, 4691

jet engine, sectional drawing, 4694

jet types, 4687, 4689

Langley's, 21

manufacture series, 6337-42

on look-out for forest fires, 2345

pilot's cockpit, 433, 4692

pneumatic tyre, 1167

radar pictures, 2461-6

sectional drawing of pressure cabin, 4690

types, 429, 4577, 4687-9

Wright brothers with their machine, 23

See also Airman; Flying-boats;

Internal Combustion Engine

Aeroplane, model, how to make, 4829

Aeschylus, Athenian poet, 3124, 5181

portrait, 5179

Aesculapius, mythological god of medicine, 3520

head by Greek sculptor, 4141

Aesop, Greek teller of fables, 3239

portrait, 3239

telling his stories, 3243

Aesop's fables

ant and the grasshopper, 3990

apple tree, 4246

ass and the dog, 4116

ass in the lion's skin, 4246

belling the cat, 4246

boastful traveller, 4246

boys and the frogs, 3866

boy who cried wolf, 3866

bull and the goat, 3992

cat, the eagle, and the sow, 3865

crow and the pitcher, 4245

dog and the ass, 3744

dog and the shadow, 4116

dog and the thief, 4246

dog and the wolf, 3990

dog in the manger, 4246

donkey's wish, 3745

doe and the ant, 4246

farmer and his sons, 4116

farmer and the stork, 3744

fat and lean fowls, 3992

fowl and the jewel, 3992

fox and the cock, 3991

fox and the crow, 3744

fox and the goat, 3990

fox and the lion, 3990

fox and the mask, 3992

fox and the wolf, 3745

frogs who wanted a king, 3743

goat and the lion, 4115

goat and the vine, 3866

hare and the tortoise, 3745

hen and the fox, 4115

horse and the ass, 3744

Jupiter and the ass, 3990

lark and her young ones, 3866

lawyer and the pears, 3745

lion and the bull, 3992

lion and the bulls, 4115

lion and the deer, 3992

man and his Negro servant, 3865

man and the forest, 4115

man and the partridge, 3866

man who gave up singing, 3744

old hound, 4116

proud frog, 3743

snake and the file, 3992

sour grapes, 4116

stag in the ox-stall, 3865

stag looking into the water, 3743

stag with one eye, 3991

thieves and the cock, 4245

town and country mouse, 3991

travellers and the axe, 4245

two cocks, 3990

two frogs, 4115

vain jackdaw, 3744

villager and the viper, 3866

wind and the sun, 4245

wolf and the kid, 3866, 4116

wolf and the lamb, 3991

wolf and the stork, 3743

wolf in sheep's clothing, 3992

woman and the hen, 4246

Aestivation, different kinds, 6495

Aether: See Ether

Aëtius, Roman general, 2156

Afghanistan, state on the Indian

north-west frontier; description, 6391

bridge over Chitral Gorge in Hindu

Kush mountains, 6392

flag, in colour, 6972

Kabul, bazaar scene, 6392

map, in colour, 7094

map showing historical events, 2822

Africa, third largest continent, history

and general description, 6741

Belgian possessions, 6750

British Empire outside the Union, 3311

British flags of, description, 6963

British possessions and how they

were obtained 3183

British Protectorates, system of govern-

ment, 3312

civilising effect of British rule, 3184

colonisation by European powers, 6743

deaths caused by crocodiles, 4491

explorers, 2997

French possessions, 6744

great variety of races and animal life,

6743

Italian possessions, now under military

administration, 6754

population estimate, 2042

Portugal's settlements, 3183, 6752

Portuguese explored Guinea coast, 5400

price of exploration, 3006

rubber production, 1168

Sahara desert, 2370, 2375

Spanish possessions, 6753

volcanoes and their heights, 2245

water power, 5611

picture series, 3319-24, 6745-8

Maps of Africa

animal life of the continent, 6762-3

general and political, 6755

in colour, 7098-99

physical features, 6756-7

plant life, 6758-9

See also South Africa and names

of countries

African civet, 424

African double-collared sun bird, in

colour, 3262

African elephant, 2022, 5860

African false vampire, 290

African fish owl, 3501

African grey parrot, 3499

African marigold, flower, 6380, 6384

African mud-fish, amphibian, 4745

African pygmy goose, in colour, 3261

African rhinoceros, in its haunts, 1771

African sea-eagle, 3634

African shrike, bird, in colour, 3142

African wood ibis, bird in colour, 3263

After-image, what is meant by? 3161

Agama lizard, flying and frilled lizard, 4495
Agamemnon, Greek king of Mycenae, 4998
 story in the *Iliad*, 5303
 tomb at Mycenae, 6993
 See also Cassandra
Aganippe, mythological fountain, 3530
Agar-agar, prepared from Ceylon moss, 3410
Agasias, sculptor of the Borghese Warrior, 4403
Agate, form of quartz, 768, 1301
Agatha, St., a Sicilian who was martyred in the reign of Decius, 6312
Agave, of Amaryllis family, 2889
 plantation of, 2560, 2683, 6695
 plant, in colour, 2687
Age, did the people of long ago live longer? 5128
 how can we tell the age of a tree? 4996
 why do we grow old? 3164
 sculptures of Lucien Alliot, 5131
Agelados, Greek sculptor, 4137
Age of Bronze, sculpture by Rodin, 5136
Age of Innocence, Sir Joshua Reynolds' famous painting, 2052
Agessander, Greek sculptor, part creator of the Laocoön group, 4396
Agincourt, battle of, 956, 3920
 battlefield today, 4052
 English and French troops, 957
Aglaia: see *Graces*
Agnar, story of, 2266
Agoracritus, Greek sculptor of the fifth century B.C., 4144
Agra, India, beautiful Pearl Mosque at, 5627, 5084
 famous buildings, 2820
 street scene, 2951
 zenana in fort, 5636
 See also Taj Mahal
Agram, Yugoslavia: see *Zagreb*
Agricola, his conquest of Britain, 6918
Agricultural labourer, life of hardship in 16th, 17th, and 18th centuries, 4255
 French peasants' rising, 4255, 4371
 French Revolution aids, 4258
 in 16th century, 4255
Agriculture, conference of nations at Hot Springs, 6484
 Food and Agriculture Organisation, Uno, 6485
 helped by most birds, 6855
Agrilus, great, beetle in colour, 6336A
Agrimony, of genus *Agrimonia*, 6492
 what it is like, 4290
 flower, in colour, 4287
 hemp, flower, 6009
Agrippa, Menenius, stays rising of people on Aventine Hill, 6355
Agrippa II, Herod, St. Paul brought before, 6540
Agrippina the Elder, mother of the Roman emperor Caligula, 2878
Aguecheek, Sir Andrew, in *Shakespeare's Twelfth Night*, 6049
Aguti, animal, 1032
Ahab, Elijah foretells his death, 2606
 search for pasture, 2486
 worship of Baal allowed, 2481
 Elijah fleeing before Ahab, 2481
 meets Elijah in vineyard, 2605
 offering to buy Naboth's vineyard, 2604
Ahasuerus, King, marriage with Esther, 3225, 6804
 Mordecai honoured by, 3226
 See also *Xerxes*
Ahaziah, King, slain by Jehu, 2728
Ahmed Fuad, mosque in Istanbul, 6141
Ahmedabad, India, Jumma Masjid mosque, 2279
 mosque of Ranees Sepree, 5084
 ruined temple, 5636
 tomb of Huthi Singh, 2952
Ahriman, Zoroastrian evil spirit, 5086
Al, three-toed sloth, 2270, 2271
Aldan, St., Bede on, 2778
Aigues Mortes, formerly one of the chief Mediterranean ports of France, 6358
Aileron, aeroplane's wing-flap, 4579
Ainos, early inhabitants of Japan, 6812
Ainsworth, William Harrison, English novelist, 3580; portrait, 3579

Air, the gaseous atmosphere of the Earth, 203, 3332
 climate affected by, 2620
 compressed air for brake power, 3044, 4072
 cooling of, 2865
 diver's supply of, 6589
 electricity in upper air, 238
 experiments with air and water, 629
 food which we can be hungry for, 2182
 fresh air benefits us, 698, 942
 known as fluid in language of science, 5197
 liquid air and its uses, 5319
 nitric acid and nitrogen from, 856
 passage into and through the body described, 1817
 solid air obtainable from liquid air, 5319
 sound conveyor, 6059
 specific gravity, 4954
 temperature influences, 2744
 temperature over sea and land, 2618
 thickness of covering of Earth, 139
 varying nature, 684
 weather caused by its changes, 2865
 weight of a cubic foot, 7076

Wonder Questions

can an aeroplane stand still in the air? 6230
 can a noise be heard where there is no air? 4893
 does air dissolve in water? 1049
 does everything in the air move with the Earth? 4268
 does the air ever get used up? 1678
 does the Earth make the air we breathe? 4518
 how can a bird fly though it is heavier than air? 6854
 is night air bad for us? 1176
 is the stuff in Earth and air and sea always changing places? 6725
 where does all the bad air go? 2174
 why does it not stop the sun's light? 4136

air and water, experiments with, 629
 See also Air wave, Atmospheric pressure, and Breathing

Aira, tufted, grass, 583
Air-conditioning, how it is done, 6852, 6853

in airliner, 4690
Air-cooling, used for motor-cycle engines, 4324

Air current, sounders, 184
Aird, Sir John, builder of Aswan Dam, 4106; portrait, 4102
Airedale, dog, 668

Airey prefabricated house, pictures, 2537
Air Football, game, 508
Airliner, voyage described, 429-31
 guided by radar, 2469
 refreshments being served, 434
 refuelling, 434
 sectional drawing of air-conditioning, 5690
 types, 4687-8

Air-lock, its use in tunnelling, 6218
Air mail, beginnings in England, 4629; pictures, 4633
Airman, story of pioneers, 19
 courage of, 872
 portraits of the first airmen, 21

Airport, American dirigible landing at, 4445
 See also Aeroplane

Airpump, for exhausting, compressing or transmitting air, Robert Boyle's, 5323
 Von Guericke invents first, 5324
 position in railway engine, 3946

Air Raid, effects in World Wars, 1710, 1942, 1945
Aircrew, aeroplane's, 4578
 how fast does an aircrew move? 6346

Airship, war invention that man had dreamed of for centuries, 4445
 engine-power, 4448
 Second World War use by United States, 4452

Pictures of Airships

airships at mooring mast, 4451
 all-metal airship, 4447

arriving at airport, 4445
 control cabin, 4447
 cover being put on framework, 4451
 framework of rigid, 4450
 gondolas and passenger quarters, 4450
 Graf Zeppelin, 4447
 non-rigid type in flight, 4451
 petrol tanks, 4449
 R.34 taking in hydrogen, 4450
 R.100 at mooring mast, 4451
 Roma, semi-rigid type, 4451
 under construction, 4448
 See also Zeppelin

Airspeed Ambassador, aeroplane, 4688
Air wave, sound of the whistle of the wind, 184
 why cannot we feel air-waves with our hands? 6355

Airways: see British Overseas Airways Corporation, Aeroplane, Civil Aviation, and so on

Airy, Sir George, English astronomer, 3614; portrait, 3611
Aisne, battle of the, French attack (1917), 1708

Aix Cathedral, Froment's picture of the Burning Bush, 1058
Aix-la-Chapelle, or Aachen, Germany, 4428

Alcuin's school at, 4956
 cathedral built by Charlemagne, 5746
 Charlemagne's capital, 2522, 3918, 4310

Aizelin, Eugene, sculpture by, 5259
Ajaccio, capital of Corsica, Napoleon Bonaparte born there, 1441
 general view, 4178

Ajanta, rock temple at, 5626
Akaba, port of Transjordan on the Red Sea, 6269

Akbar, Mogul emperor of India, united India (1542-1605), 2944, 4125
Sikandra Tomb erected by, 5628

A Kempis, Thomas: see Thomas à Kempis
Akerblad, work on deciphering Ro-etta Stone, 6860

Akers, Elizabeth: see Poetry Index
Akhmatov, king of Egypt, life, 6801
 relics found at Tel-el-Amarna, 6887
 portrait, 6797

Akyab, Burma, mosque at, 5634
Alabama, U.S.A., flag, in colour, 6970
Alabaster, used by early English sculptors, 4766

Aladdin and the Wonderful Lamp, story with picture, 1650
Alaric, West Gothic king and conqueror, 1908, 2883

brother's tribute to Roman power, 2277
 victory at Aquileia, 4794
Alaska, America purchases it from Russia, 910

caribou migration, 1404
 what is the Alcan Highway? 2663

Pictures of Alaska

map, in colour, 7100
 native family at home, 3793
 Red Indian totem poles, 3793
 reindeer herder's camp, 3793
 sluicing for gold, 3793
 town of Douglas, 3793

Alban, St., his martyrdom, 2511
Albania, story of, 5775
 and Security Council of Uno, 6482
 flags, in colour, 6972
 girls of Southern Albania, 5776

Maps of Albania

in colour, 7089
 physical features, 4557
Albano, painter of Carracci school, 936
Albatross, characteristics of, 4000
 flying over sea, 3999

four alighting on the water, 2637
Albert, king of the Belgians, 5645
Alberta, Canadian Province, 2196

Pictures of Alberta

arms, in colour, 4985
 Bassano Dam on Bow River, 5978
 canoeing, Banff National Park, 2197
 combine-harvester, 2201
 flag, in colour, 6967

Parliament Buildings, Edmonton, 2330
Albert Canal, Belgium, 5650
Albert Falls, Natal, 2129

Alberti, architectural work of, 6110
Albert Memorial, London, 1222

- Albert Nyanza, lake of Uganda, 3006
 Albertus Magnus, German philosopher monk, 4335, 4837
 Albi, old French city in Languedoc, 4171, 5990
 view of cathedral, 6002
 Albigenes, persecution, 6922
 Albion, why did the ancients call England Albion? 4387
 See also Britain, Ancient
 Albulas Pass, Switzerland, railway, 4673
 Album, how to make from oddments, with picture, 3972
 Albumen, meaning, 2786
 white of egg contains very little, 2559
 See also Protein
 Alcámenes, Greek sculptor, 4028, 4144
 Alcan Highway, what it is, 2663
 Alcantara, Royal Mail liner, pictures, 3818-20, 3825
 Alcazar, what was the Alcazar? 3652
 one at Segovia, general view, 5280
 Pictures of the Alcazar, Seville
 elaborately decorated arches, 5621
 exterior view, 5281
 hall of ambassadors, 5631, 5633
 king's sleeping apartment, entrance, 5629
 Alcestis, how she gave her life for her husband, 6937
 Alchemy, chemistry preceded by, 426
 Alcibiades, Athenian general and statesman, 3125; portrait, 3119
 Alcohol, the enemy of life, 2679
 athletes avoid, 2681
 Education Ministry's booklet on evil effect of, 2680
 body less able to resist disease because of, 2681
 brain affected by, 2680
 breathing-centre of brain affected by, 1322
 children safeguarded by law against, 2679, 4903
 haemoglobin affected by and how, 944
 manufactured from potato, 2441
 Metchnikoff's views on, 2626
 poison to all living creatures; ally of bad microbes, 699
 source of numerous valuable substances, 4348
 specific gravity, 4954
 sugar-made and its uses, 699
 white cells stop working in presence of, 1062
 yeast alcohol's uses, 699
 yeast plant turns sugar into, 699
 Alcor, star, 3852
 Alcott, Louisa: see Poetry Index
 Alcuin, Anglo-Saxon monk and scholar, 4956
 Charlemagne invites English monk to his court, 3918
 his life story, 6920
 letter to Charlemagne on his pupils' studies, 2522
 Aldabra, tortoise, 4489
 Aldebaran, star, distance from Earth, 2995
 red colour, 3849
 size, 3788, 3852
 Aldeburgh, fishing town in Suffolk, Moot Hall, 1085
 view, 1835
 Alder buckthorn, fruit in colour, 3669
 Alderman, who he is and his duties, 4408
 Alderney, Channel Islands, flag in colour, 6966
 Alderney cattle, Jersey and Guernsey breeds, 1154
 Aldersgate Street, Milton's school, 4480
 Alder tree, size of, 3787
 leaves and flowers, 3914
 Aldobrandini Marriage, painting in Vatican Museum, Rome, 324, 315
 Aldrich, Thomas Bailey: see Poetry Index
 Alecto, mythological Fury, 3532
 Alehoof, name for ground ivy, 5022
 Alemanni, Teutonic tribe, 4668
 Aleppo, Syrian city, 6270
 ci-adel, 6271
 Alessi, Galeazzo, Italian architect, 6110
 Aletsch Glacier, Switzerland, 4876
 Alexander the Great, Macedonian king and general, 3126, 4395
 artist's rebuke, story, 3370
 city of Alexandria founded by, 2153, 6877
 coins stamped with his head instead of heads of the gods, 4395
 conquers Egypt, 6877
 Diogenes visited by, 5002
 influence on Greek art, 4395
 pirate pardoned, story, 156
 Punjab conquered by, 2810
 pupil of Aristotle, 2153
 temple of Diana at Ephesus built in time of, 4395, 5498
 wonderful buildings of ancient Persia destroyed by, 5377
 Pictures of Alexander the Great
 ancient statue now in Rome, 5135
 coin bearing his head, 5391
 defeat of Darius by, 3129
 portrait, 3119
 sarcophagus, 4402
 sculptured head, 4275
 speaking during one of his campaigns, 3127
 Alexander I, king of Rumania, 5771
 Alexander I, emperor of Russia, 5896
 John Howard commemorated by, 5450
 Alexander I, king of Serbia, 4555
 Alexander I, king of Yugoslavia, 4556
 Alexander II, emperor of Russia, reforms of, 5896
 Alexander III, emperor of Russia, 5898
 Alexander, Cecil Frances, Irish writer of hymns, 1758
 See also Poetry Index
 Alexander, John, American painter, Black and Green, painting by, 3294
 Quiet Hour, painting by, 3295
 Woman in Rose, painting by, 3294
 Alexander Severus, Roman Emperor, 2881; portrait, 2879
 Alexanders, common, plant, member of genus Smyrniun, 6492
 flower, in colour, 5644
 Alexander's Ragtime Band, early jazz song, 1269
 Alexandra Palace, television station 2343, 2345
 Alexandretta, Gulf of, excavations of an ancient cosmopolitan port there, 6987
 Alexandria, Egypt, 6873
 catacombs at, 444
 centre of learning under the Ptolemies, 6878
 famous library, 6877
 founded by Alexander the Great, 2153, 6877
 Greek art once centred at Alexandria, 443, 4395
 Greek genius kept the lamps of knowledge burning in, 2153
 lighthouse at, 4884, 6878, 4888
 scenes, 6880
 Alexandroupolis, Greek port, 5768
 Alfalfa, fodder plant: see Lucerne
 Alfieri, Count Vittorio, Italian poet and writer of plays, 4583
 Alfonsen, Somerset, where William and Dorothy Wordsworth lived, 2473
 Alfred the Great, 595, 2905
 cakes burned, famous story, 2906
 English prose literature founded on his works, 2908
 how he planned his day, 6831
 Latin works translated into English by, 894, 2908
 laws of, 894, 2907, 2908
 navy in England founded by, 891, 2907
 Pictures of Alfred the Great
 appealing to the people, 593
 as minstrel in Danish camp, 2905
 portraits, 725, 889
 scolded for letting cakes burn, 593
 sitting under oak tree, 892
 statue at Winchester, 1591
 trial scene in his day, 2907
 Alfred's Jewel, what is it? 6353
 Algae, blue-green plants in lakes, 1068
 importance to man, 1439
 reproduction method, 3409
 seaweeds and fungi, 3409
 where they grow, 3409
 See also names of Seaweed
 Algebra, thinking in signs, 560
 Algiciras, nearest town in Spain to Gibraltar, general view, 5269
 Algeria, French North African dependency, 6744
 French conquest (in 1830), 3000, 4049
 Pictures of Algeria
 Algerian ladies on camel, 1531
 natives gathering dates at Biskra, 1939
 people, 6745-48
 scenes, 6760-61, 6764
 soldier on horseback, 1904
 swarm of locusts, 6449
 map, in colour, 7098
 Algiers, capital of Algeria, 6744
 battle of Algiers, 5411
 scenes, 6760
 Sidi-el-Raman Mosque, 6761
 Algol, Demon Star, 3854
 passing its dark companion, 3851
 Alhambra, ancient palace of the Moorish kings of Granada, Spain, 5622
 Pictures of the Alhambra
 arches leading to Court of Lions, 5630
 buildings overlooking Court of Lions, 5629
 court in, 5279
 Court of Fishpond, 5621, 5632
 Court of Lions, 5623
 distant view, 5283
 Fountain of Lions, 5621
 hall and arches, 5625
 Hall of Ambassadors' window, 5623
 Hall of the Two Sisters, 5630
 king's sleeping apartment, 5631
 porch in court, 5625
 Ali Baba and the Forty Thieves, 283
 Alicante, Spanish Mediterranean port, 5278, 5282
 peasant of, 5275
 Alice in Wonderland, how Lewis Carroll's story was first told, 401
 Lewis Carroll telling the story, 398
 Mad Tea-Party, story, 6076
 Tweedledum and Tweedledee, story, 6323
 Alimentary canal, small projections, diagram, 2061
 Alioth, star of the Plough, 3726
 Alive, meaning of expression, 77
 Alkali, nature of, 4347, 6424
 Alkanet, member of genus Anchusa, 6493
 Alkmaar, Holland, cheese market, 5539
 Allahabad, capital of the Indian United Provinces, fine inscribed column, or lat, 5626
 Allegory of Spring, Botticelli's painting in Florence Academy, 574
 Alleluia, plant: see Wood sorrel
 Allen, Charles Grant, Canadian novelist and essayist, 4336
 Allenby, Viscount Edmund, English field-marshal, Palestine and Syria conquered, 1709
 All for Love, play by Dryden, 1609
 All Good, plant: see Good-King-Henry
 All hail the power of Jesus's name, hymn by Edward Perronet, 1760
 Allier, chief tributary of the French Loire, scene painted by Harpignies, 3776
 Alligator, characteristics, distribution, food, and habits, 4490, 4491
 origin of name, 4491
 by an Indian lake, 2956
 by the Mississippi, 4488
 Alligator pear, Mexico produces, 7007
 Allingham, William: see Poetry Index
 Alliot, Lucien, Fond Parents, sculpture by, 5131
 Grandfather, sculpture by, 5131
 Grandmother, sculpture by, 5131
 Allis shad, fish in colour, facing 5197
 All-seed, of genus Polycarpon, 6492
 All Souls College, Oxford, arms in colour, 4988
 quadrangle and Radcliffe Camera, 6248
 Allspice, or pimento, its use and where it grows, 2804
 plant, in colour, 2686
 tree, 2802
 All's Well that Ends Well, the story of Shakespeare's play, 6043
 All the Talents, English cabinet nicknamed, 5448
 Almanac, nautical calculations, 3478
 what is the nautical almanac? 3279

Alma-Tadema, Laurence: see Poetry Index
 Alma-Tadema, Sir Lawrence, English classical painter, 2544
 his picture of Joseph, overseer of Pharaoh's granary, 993
 A Lover of Art, 2555
 Almeria, cathedral city and port on the Spanish south-east coast, mat and basket-making, 5273
 village of cave-dwellings in Spanish province, 5280
 Almond, Burbank produced new variety, 2066
 gathering of, 2065
 where it is grown, 2065
 orchard in Colorado, 5977
 fruit on branch, 2067
 Aloe: see Agave
 Alost, Belgium, 13th-century town hall, 5654
 Alpaca, animal, 1533, 1532
 wool industry founded in Yorkshire by Sir Titus Salt, 1533
 Alphabet, curious things about it, 3842
 numbers invented before, 985
 relative frequency of letters, 5736
 Sequoyia makes one for Cherokees, 5459
 where did it come from? 6857
 Alpha Centauri, star, distance from Earth, 3728
 distance from Sun, 2990
 nearest star, 3725
 two suns, 2996, 3726
 Alphonso I, king of Portugal, captured Lisbon from Moors, 5398
 Alphonso III, king of Portugal, freed Portugal from State of Leon, 5398
 Alphonso X, Castilian king, chronicles and code of laws, 5056
 Alphonso XIII, king of Spain, 5276
 Alpine barrenwort, member of genus Epimedium, 6491
 Alpine bartsia, member of Figwort family, 5521, 5642
 Alpine bistort: see Viviparous bistort
 Alpine bladder fern, in colour, 1800
 Alpine campion, member of genus *Lycnis*, 6492
 Alpine fleabane, member of genus *Erigeron*, 6493
 Alpine lady's mantle, 5518
 Alpine marmot, 1034, 1033
 Alpine meadow-rue, 5519, 5521
 Alpine polypody, fern in colour, 1798
 Alpine rock-cress, member of Cabbage family, 5520
 Alpine woodsia, fern in colour, 1797
 Alps, mountain system, 4605
 dams and hydro-electric power stations, 4172
 Napoleon crosses, 4046
 tunnels, their measurements and construction, 6595
 Hannibal crossing, 6803
 scenes, 4671-75
 Alps of the Moon, with pictures, 3481, 3485
 Alsace, old province of France, between the Vosges and Rhine, 1824, 4050
 occupied by Germany, 4049
 native girl, 4162
 Alsatian wolfhound, 668
 Altai Mountains, range in Mongolia, 6500
 Altair, star, distance from Earth, 2995
 Altamira, pictures by Cave Men at, 188
 Altar, Roman inscribed, 723
 Altar of St. Bartholomew, early German painting, 1185
 Alternate spleenwort, fern in colour, 1800
 Alternation of generations, meaning of phrase, 704
 Althaea and the Burning Brand, story 6813
 Althing, Iceland's parliament, 6356
 Altimeter, in aeroplane cockpit, 4692
 Alto-cumulus, clouds, 2869, 2872
 Alto-stratus, clouds, 2870
 Alum, kalinite, mineral, 1304
 Aluminium, chemistry of, 4470, 4222
 heat conductivity, 7073
 specific gravity of, 4954
 weight of a cubic foot, 7074
 Alva, Ferdinand, duke of, Spanish

general, defeated by William of Orange, 3880
 Netherlands devastated by, 5527
 Alwoodii, flower, 6379
 Alpyne, coal-tar product, 4472
 Amadis de Gaula, Spanish romance whose origin is unknown, 5056
 Amalekites, defeated by Israelites, 1860
 fought with Israelites, 1240, 1242
 Amanullah Khan, king of Afghanistan, 6392
 Amaryllis, family of plants, 2566, 2689, 4779
 Amasis, Greek vase painter, 3240
 Amati, Nicholas, Italian maker of violins, 3858
 Amazon, female figure introduced into Greek art by Polyclitus, 4140
 bronze statue from Herculaneum, 5010
 sculpture by Polyclitus, 4148
 Amazon River, greatest river in the world, 2494
 fresh water flows far out to sea, 4638
 vast water system, 7006
 vivid life of its forests, 7008
 voyage of De Orellana, 7000
 Amazon stone, 1301
 Ambassadors, The, Holbein's masterpiece in the National Gallery, 1193
 Amber, electricity named from Greek word for, 5323
 electric properties, 105, 233, 1347, 5618
 why is the fly found in the amber? (with picture), 3646
 picture, 1304
 Ambergis, produced by whales, 2149
 Ambidextrous, meaning of, 1185
 Ambrose, Gothic chapel doorway, 4405
 Ambrogio, Sienese painter, 563
 Amelia, novel by Fielding, 2348
 Amélineau, Egyptologist who opened tombs at Abydos, 6588
 Amenhotep III, king of Egypt, 6801
 picture, 3896
 America, discovery of, 1013
 animals: see American badger, and so on
 animals that became extinct, 1772
 art: see American art
 British colonisation of, 5207
 coal production, 2838
 colonisation by European States, 2075
 deserts of, 2375
 Dutch settlements in, 3793
 first inhabitants, 3791
 natural products, 1013
 population, 2042
 rainfall, area of heaviest, 2621
 Raleigh founds colony of Virginia, 1205
 what were the Minute Men of America? 5252
 flags, in colour: see 6965-80
 railway engines, in colour, 3509-12
 Spanish discovery, painting, 3879
 See also South America, and names of countries
 American antelope: see Prongbuck
 American art, 3285
 Hudson River School, 3286
 mural painters, 3287
 society of American artists, 3288
 American badger, 790
 American bison: see Bison
 American blight, life-story of the woolly aphid, with pictures, 5865
 American Civil War, questions at issue, slavery and union, 172, 1639, 3794
 flags of, in colour, 6971
 American flying squirrel, 1031
 American goldfinch, in colour, 3262
 American house-finch, in colour, 3264
 American jabiru, bird, 3868
 American literature, poets, 4202
 prose writers, 4331
 American opossum, 2396
 American robin, bird, 3017
 American timber wolf, 541
 American War of Independence, 1830, caused by taxation without consent, 1637, 4126
 influenced French Revolution, 3924
 British stand at Yorktown, 1333
 tea thrown overboard in Boston Harbour, 1333
 Washington crossing Delaware, 1327
 American wood duck, in colour, 3262

America's Cup, what is it? 5247
 Americium, unstable, man-made element, 4221
 Amethyst, form of quartz, 768, 1301
 Amidol, coal-tar product, 4472
 Amiens, French cloth-manufacturing town, 4170
 First World War battles, 1708
 Amiens Cathedral, nave one of the loveliest in France, 5989
 apse, 6002
 exterior, 5997
 Amiens, Peace of, March, 1802, between England and France, 1455
 Aminto, Rinaldo's pastoral, 4583
 Amman, capital of Transjordan, 6269
 views, 6277
 Ammanati, Bartolommeo, Florentine architect, finished Pitti Palace at Florence, 6108
 his sculpture of Neptune, 4722
 Ammon, Egyptian god, 6801
 wonderful temples, 5380
 Ammonia, composition, 4347
 product in gas manufacture, 3335
 Ammonite, fossil disappears in Jurassic Age, 1505, 1507
 Ammonites, ancient race, attacked Israelites, 1366
 Ammonium chloride: see Sal ammoniac
 Ammonium sulphate, crystals under microscope, 1911
 Amoeba, single-celled animal which moves by crawling, 827
 chloroform's effect on, 828
 feeding of described, with picture 827, 828, 1929
 reproduction of, 4856
 from Adriatic, under microscope, 6955
 Amoret, Lady, rescued by Princess Britomart, 5923
 Ampère, André, French electrician and mathematician, 610
 Ampère, electricity, name given to a unit of measurement, 484, 610, 7071
 Ampère's rule, law of electricity, 973
 Amphibian, 452, 4739
 limbs first present in this class, 1563
 mammals sprang from, 454, 4739
 origin of word, 452
 sprang from fish, 454
 pictures of amphibians, 4469, 4739-45
 place in scale of life, 79
 Amphisbaena, lizard, characteristics, 4496
 Amphitrite, classical goddess, 3529
 Ampullaria, shell, 1179
 Amraphel, Hammurabi's Biblical name, 6798
 Amritsar, sacred city of the Sikhs, in East Punjab, India; Golden Temple, 2953
 Indian boys at school, 2954
 Amsterdam, commercial capital of Holland, 5531
 architecture of the Bourse, 6612
 some famous pictures in, 1428, 1558
 scenes, 5537
 Amundsen, Roald, Norwegian Arctic and Antarctic explorer, 4606
 first Antarctic voyage, 6551
 flights over North Polar regions, 6442
 South Pole conquered by, 6556
 at South Pole, 6553
 portraits, 4597, 6549
 Amur, River, Eastern Asia, 6511
 Anacoda, with picture, 4617, 4618
 Anaesthetic, why does chloroform send us to sleep? 6840
 Anagni, Italy, cathedral, 5748
 Anagrams, 3970, 4096
 Analcite, mineral, 1304
 Analytical method, use in science, 986
 Anatomy, Vesalius founded, 5569
 Anatomy of Melancholy, The, book by Robert Burton, 2378
 Anaxagoras, Greek philosopher, 8124
 Anaximander, Greek philosopher, 913
 Ancestor, why we should be grateful to, 3221
 Anchises, Venus and, painting by Sir W. Richmond, 3526
 Anchitherium, ancestor of horse, 1894
 Anchor, weight of liner's anchor, with picture, 2659
 Ancient East, map in colour, 7093

- Ancient Lights**, why are these words put outside windows ? 563
- Ancient Mariner**, The, Coleridge's poem, 2473
- Ancona**, port of Italy, 4910
- Andalusia**, old province of Spain, 5274
- cattleman**, 5275
- Andalusian fowl**, 4253
- Anderlecht**, Belgium, noted for ancient church, 5651
- Andersen**, Hans Christian, Danish writer of fairy tales, 400
- education**, 4939
- dreaming of his stories**, 405
- portrait**, 399
- Anderson, Alexander** : see Poetry Index
- Anderson, Sir Rowland**, architect of Scottish National Portrait Gallery, 6472
- Andes**, longest mountain range in the world, South America, 7005
- gigantic figure of Jesus between Argentina and Chile**, 7005, 7014
- grandeur of scenery**, 7006
- railway tunnels**, 6595
- volcanic action in**, 520
- one of the highest railway bridges in the world**, 7014
- Andes, Royal Mail liner**, "Crossing the Line" ceremony, 3826
- Andorra**, miniature republic in the Pyrenees, 5411, 8858
- flag, in colour**, 6972
- André, Solomon August**, Swedish balloonist, 6439 ; portrait, 6431
- Andrena**, wild bee, 5841
- Andrew, St.**, patron saint of Scotland, 2785
- called to follow Jesus**, 3960
- his life story**, 6789
- relics of**, taken to Scotland, 6961
- portraits**, 694, 6787
- Andrews, Charles**, English missionary in India, 1144
- Androcles and the Lion**, story and picture, 155
- Andromache**, story in the Iliad, 5304
- Euripides's tragedy**, 5185
- painting by Lord Leighton**, 2555
- Andromeda** (mythological heroine), 4968
- Perseus rescuing**, sculpture, 5257
- Andromeda** (nebula), new stars in, 3976
- picture**, 13
- Andromeda** (plant), genus of order Eucaceae, 6493
- marsh andromeda**, flower in colour, 6128
- Andronicus, Livius**, Roman dramatic poet of Greek birth, 5426
- Anemogram**, what is meant by, 6721
- Anemone**, plant, 6491
- wood anemone**, flower, 4778
- Anemone**, sea : see Sea anemone
- Aneroid barometer**, how it works, 5197
- Angel** (coin), value of, 7070
- Angel-fish** : see Monk-fish
- Angelica**, plant of Parsley family, 2436
- genus of order Umbelliferae**, 6492
- wild**, what it is like and its uses, 5888
- flower**, 5891
- Angelico, Fra**, of Fiesole, Italian religious painter, 573, 4730
- itinerant work**, 825
- his painting of the Nativity**, 570
- St. Peter preaching**, painting, 5557
- Angelo**, in Measure for Measure, 6050
- Angel of the Annunciation**, painting by Memmi, 572
- Angel of the Dimples**, story, 532
- Angels' Heads**, Sir Joshua Reynolds's famous painting, 2052
- Angelus**, The, Miller's famous picture in the Louvre, 2792, 75
- Angerstein portrait**, Sir Thomas Lawrence's picture in National Gallery, 2178
- Angiosperms**, division of Spermatophyta, meaning of word, 6490
- Angkor**, ruined city of Indo-China, 5737, 6513, 6995
- reliefs on walls of Angkor Thom**, 6993
- Temple of Angkor Vat**, 6517
- Angles**, Anglo-Celtic race formed, 2644
- England's name derived from**, 592
- Gregory called them Angles**, 2273
- settlement in Britain**, 592
- Anglesey**, island county of North Wales, 340
- ancient tomb excavated**, 6997
- stronghold of British Church**, 2644
- Angola**, Portuguese West African colony, 6752
- native**, 6747
- maps of industries and physical features**, 3196-8 ; colour map, 7099
- Angoni**, natives of South Africa, 3192
- Angora**, Turkey : see Ankara
- Angoulême**, old French city on the Charente, 5946, 5754
- Angst, Carl Albert**, French sculptor, 4648
- Anhui**, province of China, 6502
- Aniline**, composition, 4346
- Aniline dye**, Sir William Perkin discovers, 4471
- ANIMAL LIFE**
- The following are the actual headings of the chapters in this section. The subjects dealt with will be found in their proper places in the index
- Nature's Thousands of Children**, 37
- The Animals Most Like Men**, 159
- Bats and Their Friends**, 291
- Big Cats and Little Cats**, 417
- The Wild Dogs**, 537
- The Friendly Dogs**, 663
- The Bears and Their Cousins**, 785
- The Great Sea Hunters**, 905
- Gnawers and Burrowers**, 1029
- The Great Cattle Family**, 1151
- The Sheep and Goats**, 1277
- The Swift Runners**, 1397
- The Camels**, 1525
- Pigs and Hippos**, 1653
- The Tapir and the Rhino**, 1769
- The Horse Family**, 1893
- The Hyrax and the Elephant**, 2021
- The Whales and their Cousins**, 2145
- Living Fossils**, 2269
- The Kangaroos**, 2387
- Animals that Lay Eggs**, 2515
- Birds Begin to Fly**, 2635
- The Crow and His Family**, 2763
- Starlings, Finches, and Buntings**, 2891
- The Larks and their Friends**, 3015
- Warblers, Babblers, Chatterers**, 3167
- Peckers, Humming-Birds, and Hornbills**, 3253
- The Cuckoos**, 3375
- The Parrots and the Owls**, 3497
- The Day Birds of Prey**, 3625
- Ducks and Geese**, 3747
- Hérons, Storks, and Cranes**, 3889
- Sea Birds and their Inland Kin**, 3995
- The Pigeons and the Doves**, 4119
- The Pheasants and their Allies**, 4247
- Birds that Cannot Fly**, 4367
- The Marvellous Reptile Family**, 4489
- The Extraordinary Snake Family**, 4615
- The Wonderful Amphibians**, 4739
- Life in the Waters**, 4855
- Fishes of the Rivers**, 4975
- Fishes off our Coasts**, 5095
- Fishes of the Deep Sea**, 5227
- Mysteries of the Border Line**, 5343
- Crabs, Lobsters, and their Kin**, 5471
- Little Many-Legs**, 5591
- The Mighty Insect**, 5709
- Bees and Wasps**, 5835
- The Wonderful Ant**, 5959
- Gnats and Flies**, 6083
- Butterflies and Moths**, 6197
- The Great Beetle Family**, 6327
- Insect Friends and Foes**, 6449
- The Great Mollusc Family**, 6575
- Queer and Lowly Creatures**, 6695
- The Wonderful Work of a Worm**, 6825
- Animal**, Nature's vast family, 37
- Agean artist's representations**, 4024
- Aristotle founded scientific study**, 1288
- Assyrian artist's representation**, 3901
- backbone compared with man's**, 1568
- beginning of animal life**, 81
- bird has higher temperature than mammal**, 328
- birth-rate of great cats and herb-eaters balanced**, 1397
- blood circulation period**, 7068
- blood proportion of weight**, 7068
- brain in highest types has most folded surface**, 2932
- brain lacks association cells and fibres**, 2934
- carnivorous have sharp long teeth**, 1930
- cat tribe, tyrants among**, 417
- cave man's drawings of**, 196
- characteristics inherited**, 906
- cerebellum more pronounced in higher species**, 2801
- chlorophyll found in**, 81, 82
- classification by Linnaeus**, 6489
- classified by presence and absence of backbone**, 451
- classified by teeth**, 1930
- coloration**, 38
- colour change in some animals due to light's effect on pigment cell**, 3661
- colours seen that men cannot see**, 561
- danger from enemies does not cause fear**, 1398
- disadvantages of specialisation**, 2269
- egg-laying animals**, 2515
- Egyptian artist's representation**, 3901
- Egyptians worshipped**, 544
- eyes of vertebrates and invertebrates compared**, 3662
- flesh-eating** : see Carnivora
- flying not a sign of progress**, 328
- Glacier Age animals**, 194
- haunts of animal life**, 1066
- hearing capacity**, 561, 3298
- heart-beat rate**, 7068
- heat**, 7068
- heat gained from oxygen**, 327
- herbivorous have munching teeth**, 1930
- India's animal life**, 2809
- instinct in**, 1184, 3585, 3586, 5123
- killing for food must be done humanely**, 2557
- lungs grown when they left sea**, 326
- mammal the highest type**, 455
- man as an animal**, 167, 1040
- man's interference with**, 38
- movement aided by form of body**, 1566
- nearest types to man**, 159
- pain not felt by victims of Carnivora**, 418
- paintings by Cuypp and Paul Potter**, 1426
- pineal or third eye once possessed**, 1770
- plants, difference from**, 78
- plants, resemblance to**, 82
- Pythagoras on man's kinship with**, 1040
- reproduction in all species**, 37
- respiration rate**, 7068
- salt instinctively sought by**, 1540
- salts in water in body**, 328
- sea-dwelling animals not all fish**, 452
- sea first home**, 325
- Secondary Period, animal life**, 1381
- sense-centres close together in brain**, 2933
- skull rougher than man's**, 1693
- smell perfected ages ago**, 2934
- sounds heard that men cannot hear**, 561
- tamed first in Bronze Age**, 315
- teeth rarely decay**, 1930
- temperature**, 7068
- temperature even**, 328
- trespass laws and**, 4904
- upright position made difficult by centre of gravity**, 5074
- virtue distinguishes man from animals**, 1733
- wild animals are not attacked by microbes**, 693
- what animals are these ? game**, 5934, 6058
- Wonder Questions**
- are all animals born blind ?** 5619
- can any animal live for years without food ?** 3279
- do animals dream ?** 922
- do animals feel pain as we do ?** 1415
- do animals know when they are treated kindly ?** 440
- do animals talk to one another ?** 310
- do animals think ?** 1049
- how fast do animals travel ?** 6852
- how long do animals live ?** 6229
- what is the longest animal that has ever lived ?** 6727
- when were animals domesticated ?** 4018
- which is the biggest ?** 5880
- why can animals do without food ?** 6600
- why do animals curl up to sleep ?** 2043
- why does a dog bury his bone ?** 2042
- Pictures of Animals**
- brain compared with man's**, 2931
- earliest backboneed animals**, 451

evolution of animals, 79
fossils, map, 224
in Heraldry, in colour, 927
migration map, 222
prehistoric animals, clock diagram, 10
profession of prehistoric life, 39
scientific classification, 2298-9

See also Bird, Fish, Insect, Invertebrate, Vertebrate, and the individual names of animals

Animalcule, 4856
seen through microscope, 1910, 1915
Animal Friends, story, 3252
Animal shadows, how to make them, with pictures, 126
Aniseed, obtained from anise plant, 2808
Anisota, caterpillars of American species of moth, in colour, 6209
Anjou, old French province in the valley of the Loire, 835

Ankara, capital of Turkey, 6136
people and scenes, 6133, 6144-5
Ankle, arch of, how supported, 1695
bones of described, 1695

Anna Karenina, Tolstoy's novel, 4818

Annals, of Ennius, 5426

Annam, Indo-China, 6512, 6513

See also Indo-China

Annamites, race of Indo-China, 6513

Annas, priest who tried Jesus, 4588

Anne, queen of England, 6470

Nassau arms dropped by, 4984

Union of England and Scotland, 1214

Anne, of Cleves, fourth wife of Henry VIII, 1078

Anne, empress of Russia, 5895

Anancy, city of French Savoy, chateau on hilltop near, 4055

Annie Laurie, the two versions of the song, 1285

Anning, Mary, discovered ichthyosaurus fossil, 1508, 1509

Anno Domini, what it means, 2295

Anno Hegirae, what it means, 2295

Anno Mundi, what it means, 2295

Anno Urbis Condita, what it means, 2295

Annual plant, what it is, 3179, 4541

Annual sea blite, what it is like, 5762

Annunciation, Rossetti's painting, 2550

Anoa, dwarf buffalo of Celebes, 1156

Anolis, Cuban, reptile, 4493

Anomala, Frisch's beetle, in colour, 6336

Anomia shell, 6580

Anopheles mosquito, under microscope, 1913, 1916

See also Malaria and Yellow Fever

Anselm, St., archbishop of Canterbury, 6921

Ant, the most impressive creature in the animal kingdom, its story, 5959

formic acid in body, 61, 5967

number of facets on eyes, 5001

seeds collected by, 945

South American acacia protected by, 5964

termite, known as white ant, 5715

watching ants at work, 3231

wisdom of, 5968

Pictures of Ants

carrying cocoons, 5965

corn-root aphides tended by, 5711

milking aphids, 5959

nests, 5965

solitary, in colour, 5714

stable of their pets, 5965

swarm removing dead queen, 5961

swarm working, 5961

various species, 5959, 5961, 5965, 5967

white ant, or termite, 5721

wood-ant, in colour, 5714

Ant and the Grasshopper, fable, 3990

Antarctica, continent lying round the South Pole, 2127, 6551

explorers of, 2380, 6549

Ross Dependency under New Zealand administration, 6897

South Pole's westward movement, 6562

are there flowers in the Antarctic? 5980

map, in colour, 7105

penguins of all kinds, 4001

See also names of explorers

Antarctic wolf: see Wolf

Antares, star, 3849, 3852

size compared with Sun, 6971

Ant-bear: see Aard-vark

Ant-eater, family of, 2273

great, in native haunts, 41, 2275

lesser, or tamandua, 2275

Antelope, its life-story, 1398

how fast can it run? 6852

varieties, 1400, 1401

See also Addax

Antelope kangaroo, 2393

Anthemius, of Tralles, Lydia, Greek architect, 5742

Anther, what it is, 332

of meadow fox-tail grass, 581

Ant-hill, section, 5965

ant-bears feeding, 2271

Anthony: see Mark Antony

Anthracite coal, coal most fully carbonised, 2834

mines in Peru, 7021

vast anthracite field in China, 6502

what it is, 3772

Antirax, Pasteur's treatment for, 2624

Anticline, rock formation which forms oil-trap, 2963

Anticosti Island, Canada, 2192

Anti-cyclone, meaning of, in weather chart, 6721

Anticyra combusta, Indian moth, caterpillar, in colour, 6210

Antigone, Sophocles's drama, 5184

story, 6691

Antigua, West Indian island, 3554

St. John harbour, 3562

Antimony, Australia's production, 2448

China's great output, 6502

picture, in colour, 1302

Antoninus, friend of Emperor Hadrian

to whom statues were erected, 4404

Roman bust, 5130

sculptured head, 4398

Antioch, statue in Vatican which is fine example of late Greek art, 4403

Antioch, ancient Syrian city, 6297, 6417

becomes Turkish town, 6270

general view, 6297

Antiochus Epiphanes, king of Syria and persecutor of the Jews, 890

Antiphilus, in Shakespeare's play, The Comedy of Errors, 6040

Antiquary, The, novel by Scott, 2722

painting by Richard Bonington, 2421

Antirrhinum, genus of order Scrophularineae, 6493

flower, 6383

Antisthenes, cynic sect formed by, 5002

Anti-toxin, diphtheria and tetanus treated with, 2628

Ant lion, insect, 6458, 6461

Antofagasta, Chilean port, 7018, 7014

Antonello of Messina, Sicilian painter, 277, 932

portrait by, 938

portrait of himself, 933

Antonescu, General Ion, Rumanian dictator, 5772

Antonine Column, Rome, its height, 3284

Antoninus Plus, Roman Emperor, portraits of himself and his wife, 2878

Antonio, in Merchant of Venice, 6041

Antonio, in The Tempest, 6296

Antonio's Wonderful Lion, story and picture, 5466

Antony, Mark: see Mark Antony

Antrim, county of Northern Ireland, Carron Tower, 2006

Lough-a-veema peaty bed, 2006

old bridge near Antrim Castle, 3070

Ant-thrush, or pitta, 3148

bird, in colour, 3143

Antwerp, Belgium's great port, 5648

cathedral, finest in Belgium, 5991

Musée Plantin, 6371

Quentin Matsys's famous picture, The Descent from the Cross, 1057

Rubens's life at, 6674

Rubens's paintings at, 1421, 5652

Pictures of Antwerp

cathedral, exterior, 5985, 5997

cathedral, nave and choir, 5987

Hotel de Ville, 6367

Hotel de Ville, Salle de Leys, 6365

Plantin Museum, 6361

Rubens's statue, 5649

view across Schelde, 5655

Antwerp pigeon, 4118

Anubis baboon, 161

Anuradhapura, Ceylon, ancient jungle city, 2813

ancient bo tree, 3052

ruined temple, 2816

Anvil, why is the end tapered? 6230

Apathus bee, insect, in colour, 5714

Apatite, phosphate of lime, 1302

Ape, resemblance to Man, 159

Barbary, with young one, 162

black, 161

Ape and the Wedge, story, 3495

Apennine chain, on moon, 3485

Apennines, mountain range running through Italy, 4909

Aphaia, Temple of, at Aegina, 4028, 5497, 5510

sculptured figures from, 4029-31

Aphides: see Aphid

Aphis, or green-fly, insect pest, 5721

kept by ants for honey dew, 5963

grape-vine aphid, life-story, 4519

insect on leaf, 5721

milked by ant, 5959

rose-tree aphid, 5719

woolly aphid, life-story, 5365

Aphrodite, goddess of ancient Greece and Rome, 3517

See also Venus

Aphrodite of Cnidus, statue by Praxiteles, 4272, 4271

Aphrodite of Melos: see Venus de Milo

Apo, Mount, volcano in Philippines, 6514

Apocrypha, Hebrew writings, 5677, 6857

Apoderus, hazel, beetle, in colour, 6336

Apollo, god of ancient Greece and Rome, 3516

god of self-restraint followed by Pythagoras, 1040

how Apollo and Mercury became friends, story, 4964

Phaethon and Apollo, 6598

temple stood on Wiltshire plain long after fall of Rome, 2398

Pictures of Apollo

ancient statues, 4029, 5010, 5130

Apollo and Daphne, painting by Henrietta Rae, 3525

Apollo and Daphne, sculpture by Bernini, 5013

painting by Briton Riviere, 3524

Apollo, Temple of, at Miletus, 5500

sculptures from frieze, 4146-47

Apollo Belvedere, famous Greek statue, now in the Vatican, 4403, 4400

Apollo Citharoedus, wonderful statue by Scopas, copy of which is in Vatican, 4277, 4274

Apollo of Amphipolis, coin, 5391

Apophyllite, silicate of aluminium, 1303

Apostles, life stories, 6787

belief in Christ's return to Earth, 6916

did any of the Apostles come to Britain? 6103, 2400

See also under separate names;

Disciples; Bible, and so on

Apothecary's Measure, liquid, 7069

Apothecary's Weight, dry, 7069

Apotheosis of Homer, Ingres's classical painting in the Louvre, 1806

Apoxymenus, The, famous statue by Lysippus, 4278, 4273

Appalachian Mountains, North America 3674, 2192

Apparent noon, what it is, 5120

Apparent time, what it is, 5120

Apparition, The, Moreau's fine painting, 2930

Appaumée, heraldic charge, 1926

Appetite, why it varies, 2184

Appian Way, catacombs in, 444

what was the Appian Way? 2157, 5488

reconstruction, 5499

view, 1780

Appius Claudius, made the Appian Way, 5488

Apple, member of genus Pyrus, 6472

Australia grows many apples, 2443

floating ball and lively apple, 'rick, 3232

how to cut an apple inside without peeling it, 1822

how to make an apple-picker, with picture, 3597

how to make a swan from an apple, with picture, 1866
moth pests, 6200
remains found among lake-dwellings of Switzerland and Italy, 1820
where does an apple come from? 679
wild: see Crab apple

Pictures of Apples

apple maggot, with pupa and case, 6087
apple tree borer, life-story, 6454
bunch of apples, 679
development from crab-apple, 1201
fine specimens of apples, 1817
seeds, 333

Appleby, arms, in colour, 4990
Appleton, Sir Edward Victor, British scientist, 6318; portrait, 6309

Apple Tree, The, fable, 4246
Apricots, fine specimens, 1816

April, origin of name, with picture, 5337
Apse, double apse used in Romanesque churches in Germany, 5746
first used in Romanesque architecture, 5744

Apuleius, Lucius, author of The Golden Ass, 3394

Apulia, Nicola Pisano heads schools of artists in, 4521

Aquarids, meteor shower, 3608
Aquarium, how to keep a fresh-water aquarium, with picture, 995

Aquatic frogbit, plant, stages in development, 1067

Aqueduct, the famous Roman aqueduct at Nîmes, 5502

Pictures of Aqueducts

carrying Grand Union Canal at Stonebridge Park, London, 2168

over Manchester Ship Canal, 4881
Roman, at Evora, Portugal, 5413

Roman, in Segovia, 5280
Roman, near Tarragona, 5284

Roman, Pont du Gard, Nîmes, 5507
under Canadian Pacific Railway, 1793

Aquinas, St. Thomas, 4838, 6848
portrait, 4837

Aquitania, Cunard White Star liner, oil furnaces, 3707

Arab horse, characteristics of, 1898
Arabia, great peninsula forming the south-western part of Asia, 6261

Carlyle's description, 2282
village school, 6263

Maps of Arabia

general, 6400
in colour, 7094

See also Saudi Arabia
Arabian camel, 1525, 1532

Arabian Nights, The: see Thousand and One Nights

Arabic, language of the East, 5676
Maltese language derived from, 3420

Arabic architecture: see Saracenic architecture

Arabi Pasha, defeat at Tel-el-Kebir, 6878

Arabs, a pure Semitic race, Andalusia's prosperity under, 5274
believed in magic, 2280

literature from camel-driver's songs, 1526
occupied Portugal, 5398

religion influenced by Aristotle, 1288
taught Venetians, 272

translated Hippocrates and Galen into Arabic, 2504

did they give us our figures? 6597

Pictures of Arabs

caravan on trek, 1530
children on camel, 1530

encampment in desert, 6261
family in desert, 1529

home on camel's back, 1530
lady alighting from camel, 1529

on horse, 89
selling corn in Iraq, 6267

See also Algeria; Arabia; Mohammed; Mohammedanism; Morocco; and other countries in which Arabs live

Aracari, double-collared, bird in colour, 3141

Arachne, her challenge to Minerva, story, 6938

Aragon, once a powerful Spanish kingdom, 6270

Aragonite, carbonate of calcium, mineral, 1303

Aral Sea, inland lake in Turkestan, 2494

Aramaic, language Jesus spoke, 4994

Aran Islands, Ireland, felsite rocks on coast, 2005

Inishmaan village, 3069
shoemaker and his daughter, 3069

Araucanians, the chief Indian race of Chile, 7018

Abrescent grass tree: see Grass tree

Arbutnot, John, originator of John Bull, 6839

Arc: see Electricity

Arc, of circle, how to find length, 7075

Arcades, masque for which Milton wrote songs, 1234

Arcadia, prose romance by Sir Philip Sidney, 740

Arcady, what do the poets mean by Arcady? 3394

Arcas, Lesser Bear, constellation named from mythological youth, 3519

Arcesilaus, Greek sculptor who worked in Italy, 4404

Arcturi, Galileo died at, 3609

Arch, beauty of Romanesque, 5746
evolution of curved form, 5377

ogee arch used by Saracens, 5622
pointed Gothic arch, 5869

Romans make use of in building construction, 5502

two kinds used in early buildings, 3769
Roman, at Orange, 76

Archaeology, ancient civilisations traced by, 6859

British Isles, discoveries in, 6996
central America, discoveries in, 6996

Crete, Troy, and Ancient Greece, discoveries in, 6985

Egypt, wonderful discoveries in, 6880
Farther East, discoveries in, 6988

Italy, discoveries in, 6988
Mesopotamia and its ancient history, 6868

Palentine, discoveries in, 6987
Syria, discoveries in, 6987

See also under names of countries and places

Archaeopteryx, first bird, 44, 646, 1508, 2636

Archangel, Arctic port of Russia; Ivan the Terrible trades with England by, 5894

general view, 6028

Archangel (plant): see Yellow dead-nettle

Archbishop, coat-of-arms in colour, 4987

Arched clytus, beetle, in colour, 6335

Archegosaurus, prehistoric reptile, 1259

Archer, James, The Passing of King Arthur, painting, 6948

Archer, M., first perforated postage stamps, 1415

Archer-fish, 5231

Archerms, one of the earliest Greek sculptors, introduced the Winged Victory type of sculpture, 4026

smile in Art first invented by, 4027

Archichlamydeae: see Polypetalae

Archimedean screw, 6351

Archimedes, Greek scientist, 1290, 6804
built warships of British oak, 3381

determined ratio of circumference of circle to diameter, 4265

discovered principle of displacement of liquids, 6856
his theories studied by Galileo, 3609

at defence of Syracuse, 6803
portrait, 6797

tries to measure circle's area, 4265
Archimedes (ship), Sir Francis Smith's powerful steamship, 3738

Architecture, for general survey of its history see Art, chapters beginning on page 5375

ambulatory, 5745

apse, 5744

arch: see Arch

Assyrian era, 5377

Babylonian or Chaldean era, 5376

buttress and its uses, 5869

Byzantine: see Byzantine Architecture

chevet, 5745

Chinese: see Chinese Architecture

Classical: see Classical Architecture

clerestory, 5868

Egyptian: see Egypt, Ancient
English: see English Architecture
evolution of curved arch, 5377
first primitive building, 5376
five great orders of classical architecture, 5496, 5503

forces that have gone to creation of world's architecture, 5375

French: see French Architecture

Gothic: see Gothic Architecture

Greek: see Greek Architecture

how to judge architecture, 5495, 5743

Indian: see Indian Architecture

Japanese: see Japan, Architecture

London's, 4225-30

Norman: see Norman Architecture

Pelagic, 5380

Persian: see Persia, Ancient

Renaissance: see Renaissance Architecture

Roman: see Roman Architecture

Romanesque: see Romanesque Architecture

Ruskin's study of, 3220

Saracenic: see Saracenic Architecture

triforium, 5868

why called history in stone, 5375

what were the first buildings like? 3769

Pictures of Architecture

buildings of Ancient World, 5374-5, 5381-8

development, picture story, 3770-71

Early Christian, Byzantine, and Romanesque, 5739, 5741, 5747-54

Eastern, 5621, 5623, 5625, 5629-36

English, Norman and Gothic, 5865, 5867, 5875-82

European Gothic, 5995-6002

Greek and Roman, 5505-12

homes of England, 6245-52

Italian Renaissance, 6107, 6109, 6115-22

late-Victorian and modern, 6605, 6607, 6613-16

London's great buildings, 4231-38

Tudor, 1085-88

western Europe, 6356-7, 6361-9

Wren's buildings, 6238-9

See also under names of countries and architects

Arch of Titus, splendid example of Roman relief work, 4404

Arch of Triumph, what was the origin of the Arch of Triumph? 3652

Arctot, battle of, 1751, Clive's victory in India, 1828, 2946

Arctic, North Pole expeditions, 6431

pioneers of exploration, 4597

area of snow and ice, 2126

day's length, 2742

explored by Eskimos and Laplanders, 770

forests and jungles, 1260

can men live and work at the North Pole? 2414

pictures, 6430, 6437, 6441, 6443

maps, 6435; in colour, 7105

Arctic fox, 537, 541

Arctic hare, turns white in winter, 1036

Arctic skua, bird, 2767, 3997

Arctic tern, bird, food and characteristics of, 3995

migration of, 2642

pictures, 2637, 3023, 3997

Arctium, genus of order Compositae, 6493

Arctostaphylos, genus of order Ericaceae, 6493

Arcturus, star, age and size, 3849, 3852

distance from Earth, 2995

Arday, Ireland, chalice from, 3063

Ardebil, Persian town, 6385

Ardeche River, rugged scenery, 4056

Ardenne, rugged forest plateau in Belgium and northern France; France gets wool from, 4170

Silva Carbonaria of the Romans, 5646

Ardmore, Ireland, round tower, 3060

Areopagitic, Milton's great prose work, 1232, 4481; why so named, 1355

Areopagus, court in Athens, 1355

Arequipa, city of Peru, 7021

Ares, war god of ancient Greece, 3516

See also Mars

Arethusa, mythological nymph, 3530

Artino, Spinello, Italian painter of the Florentine school, 673

Arevalo, Philippine Islands, old municipal building, 6516
Arezzo, old city of Tuscany, Italy, 4910
 Michael Angelo's boyhood near, 6183
 Etruscan relics found, 6994
Argali, Asiatic wild sheep, 1283
 Marco Polo discovered them, 1283
 picture, 1280
Argema mitrei, most wonderful moth in world, in colour, 1420
Argentina, South American republic, 7016
 sheep flocks, 799
 flags, in colour, 6972
 postman, 4636
 railway engine, 3510
 scenes, 7009

Maps of Argentina

animal life of the country, 7029
 general and political, 7023
 in colour, 7104
 physical features, 7025
 plant life, 7027
Argentine horned frog, 4743
Argon, Professor Ramsay's discovery, 987
 an element, 4222
 Cavendish finds strange gas, 6310
 use in electric lamps, 1100
Argonaut, mollusc, 6577, 6580
Argos, Greek town, once centre of Argive school of sculpture, 4138
Argostoli, Cephalonia, sea runs inland at, 6726, 6726
Argus, mythological peacock, 3514
 guardian of Io, story, 4484
Argus pheasant, plumage, 4253
 picture, 4249
Ariadne, sculpture by H. Parker, 4771
Arica, port of northern Chile, 7019
Ariel, in Shakespeare's play, *The Tempest*, 6295
Ariel (astronomy), moon of Uranus, 3356
Aril, or arillus, or mace, 2806
Arion and his Golden Harp, story and picture, 5333
 riding on dolphin, sculpture, 5259
Arion ater, black slug, 6577
Arion epicurorum, black slug, 6577
Ariosto, Ludovico, Italian poet and writer of plays, his *Orlando Furioso*, 4583; portrait, 4581
Aristaeus, mythological demigod, 5350
Aristides, surnamed *The Just*, Athenian statesman and general, 3123
 asked by peasant to mark his vote, 3122
 portrait, 3119
Aristocracy, meaning of, 1040
Aristophanes, Athenian poet, 5185
 his play, *The Wasps*, 6819
 portrait, 5179
Aristotle, Greek philosopher, 1287, 2153, 5824
 Albertus Magnus translates works, 4838
 biological ideas, 5569
 classification of plants, 6489
 Galileo disproves his astronomical theories, 3609
 laid foundations of physical science, 1288, 3128
 on man as a social animal, 6373
 Plato's teaching compared with, 1287
 works on Constitution of Athens, 684

Pictures of Aristotle

as boy, sculpture by DeGeorge, 5014
 at the foot of the Acropolis, frontis. Volume 4
 Plato and Aristotle, Raphael' Vatican fresco, 1287, 5825
 thinking, sculpture, 5823
 with pupil in Athens, 5824
Arithmetic, ancient Egyptians understood, 427
 books written long before arithmetic used, 985
 how to multiply by nine or ninety-nine, 4591
 puzzle in rhyme, 2234, 2360
 See also Number
Arizona, South-Western State of U.S.A., 7004
 cactus, 207, 3054
 flag, in colour, 6971
 Roosevelt Dam, 5975
 Arizona poisonous lizard, 4492

Ark, Noah's, dove or pigeon that returned with olive leaf, 4119
 story, 376
 building of, 374
 dove that returned not, 376
Arkansas, State of U.S.A., flag, in colour, 6970
Ark of the Covenant, brought to Jerusalem, 1985
 carried by Israelites into battle, 1738
 placed in temple, 1241
Ark shell, 6580
Arkwright, Sir Richard, English inventor of the cotton-spinning frame, 172, 5940
 women listening at his window, 5949
Arlberg Tunnel, length and age, 6595
 connects Tirol and Switzerland, 4674
Arles, ancient city of Provence, France, 4171
 its Romanesque churches, 5746

Pictures of Arles

Roman arena, exterior, 5511
 Roman arena, interior, 5512
 Roman theatre, 5511
 St. Trophine, cloisters, 5754
 scene, 4179
Arles, Council of, 6918
Arlington, U.S.A., Unknown Soldier's tomb, 3805
Arm, bones described, diagram, 1694
 the development, 455
 how raised by biceps, diagram, 1811
Armada, The, Spanish fleet defeated by Drake, 1084
 Drake's joke to Queen Elizabeth, 6451
 Spain's decline after fleet's disaster, 3880, 5274
 cannon-ball, 4859
 scene on English ship in action, 1075
 wreck, painted by Goodwin, 1075
Armado, characteristics, 2274
 pictures, 2269, 2275
Armagh, Northern Ireland, Roman Catholic cathedral, 3074
Armature, dynamo, 611
 in electric bell, 974, 977
 what it is, 4763
Armatus flower beetle, insect, 6329
Armenia, republic of U.S.S.R., 6014
 as part of Assyrian Empire. map, in colour, 7093
 maps, 5904, 5908
Arminius, German chieftain, 1538
Arms, why do we swing them? 680
Arms: see Heraldry
Arms of community, what it means, 4988
Armstrong, Martin Donisthorpe, English writer, 4084
Army, British, Florence Nightingale's work, 3986
 flags, in colour, 6965-66
Army Council, flag, in colour, 6966
Army worm, food and habits, 6085
Arne of Synnöve, Björnson's masterpiece, 4941
Arnhem, Holland, airborne attack during Second World War, 1947
Arnica, used for bruises, 2691
 where it grows, 2691
Arno, river of Northern Italy, 4910
 Ponte Vecchio at Florence, 4724
 where the Brownings walked, 3454
Arnold, Matthew, English poet, essayist, and literary critic, 3831, 4077
 portrait, 4077
 portrait with father, 4135
 See also Poetry Index
Arnold, Samuel, English writer of plays and songs, 1264
Arnold, Thomas, portrait with son, 4135
Arnolfini and his wife, by Jan van Eyck, 1053
Arnolfo di Cambio, Florentine architect and sculptor, 4715, 5992
Arpád, Magyar National hero, 4550
Arras, ancient capital of Artois, France, fine town hall, 6359
 weaving of tapestry, 6738
Arras Road, The, Corot's fine painting in the Louvre, 2791
Arrhenodes, marked, beetle, in colour, 6336A
Arrian, Greek historian and philosopher, 3240

Arrival of St. Ursula at Cologne, Memling's picture a piece of perfect composition, 1056
Arrow, what makes it fly? 1176
Arrowhead (plant), member of genus *Sagittaria*, 6008, 6497, 6009
Arrow muzzlet anemone, in colour, 1554
Arrowroot, inferior food, 2429
 plant, in colour, 2686
Arrows for his Soldiers, story, 4854
Arsenic, mineral, 1302
Arshad-ed-Dowleh, death in Mohammed Ali's service, 5952

ART

The following are the actual headings of the chapters in this group; the subjects dealt with will be found in their proper places in the index
 The Rich Treasure that is Ours, 65
 The Cave Men and their Pictures, 191
 The Artists of the Old Empires, 315
 A Great Light Shines, 443
 The Wonder Men of Florence, 565
 Leonardo and Michael Angelo, 687
 Raphael and his Time, 819
 Venice Rises and Italy Wanes, 931
 The Artists of Flanders, 1051
 The German Painters, 1185
 The Spaniards and Their Pictures, 1307
 The Dutch and the Flemings, 1421
 Rembrandt, 1557
 The Rise of French Art, 1681
 French Art After the Revolution, 1803
 Britain's Art Begins, 1923
 Britain's Golden Age, 2049
 Romney and Lawrence, 2175
 The British Landscape Artists, 2301
 Turner and the Water-Colour Men, 2419
 The Painters of Yesterday, 2543
 British Painters of Our Time, 2667
 The Nature Artists of France, 2789
 French Art Out of Doors, 2923
 Modern Movement in French Art, 3041
 A Gallery of French Paintings, 3169
 The Painters of America, 3285
 European Artists of 100 Years, 3397
 Famous Pictures of the World, 3533, 3653
 A Gallery of European Paintings, 3773
 The First Sculptors, 3891
 The Early Days of Greece, 4023
 The Golden Years of Greece, 4137
 The Followers of the Golden Age, 4269
 Old Empires and New Europe, 4395
 Italy's Immortals, 4521
 The Sculptors of France, 4643
 Our Own Sculpture, 4765
 The Way of the Modern Sculptor, 4895
 Sculptures Ancient and Modern, 5007, 5129, 5253
 The Buildings of the Old World, 5375
 The Greek and Roman Builders, 5495
 The Eastern Builders, 5621
 Architecture in Christian Times, 5739
 Gothic Architecture in England, 5865
 The Golden Years in Europe, 5985
 The Renaissance in Italy, 6107
 Inigo Jones and Christopher Wren, 6235
 The Renaissance in Europe, 6357
 Architecture After Wren, 6469
 Architecture Today, 6605
 The Craftsmen and Their Work, 6731
 Digging up the Ancient World, 6859, 6985
ART (School Lessons)
 The following are the actual headings of the chapters in this group; the subjects dealt with will be found in their proper places in the index
 How to Make Your First Picture, 132
 Patterns and Pictures, 280
 Patterns and Potatoes, 388
 Colours and Mixing Paints, 512
 Modelling in Clay, 638
 Ways of Modelling, 762
 Materials For Carving, 882
 Drawing With Pen and Ink, 1005
 Making a Picture Book, 1129
 Making a Picture Map, 1263
 Flowers Drawn With Pen and Ink, 1378
 Painting on Dark Grey Paper, 1501
 A Portrait From Imagination, 1630
 Portrait Picture From Life, 1750
 The Making of Models, 1873
 Subjects For Pictures, 1998
 A Picture From a Window, 2122

- Painting a Vase of Flowers, 2242
 Framing Pictures, 2363
 Printing on Fabric, 2490
 Mosaic Work, 2614
 Picture of a Street, 2738
 Pictures of Trees, 2862
 After the Lessons, 2987
Art, Aegean : see Aegean art
 American : see American art
 architecture : see Architecture
 Assyrian : see Assyrian art
 British : see British art
 Bronze Age, 315
 Byzantine : see Byzantine art
 cave men's art, 191
 climate's influence, 2301
 difference between studio and outdoor painting, 2924
 divisions—Painting, Sculpture, and Architecture, 66
 Dutch : see Dutch art
 early Christianity's mark upon, 443
 Egyptian : see Egyptian art
 emotions that inspired pictures, 66
 European artists of 100 years, 3397
 excavation reveals its history, 6859
 Flemish : see Flemish art
 Flemish and Italian schools compared, 1052
 Florentine : see Florentine art
 France takes leadership in modern world, 2667
 French : see French art
 German : see German art
 Greek : see Greek art
 Gothic : see Gothic art
 how a nation's art is formed, 3285
 idolatry in some primitive arts, 198
 Impressionist movement, 2928, 3041
 Italian : see Italian art
 man's first efforts towards, 170
 meaning to ordinary citizens in time of Renaissance, 565
 Moorish culture's influence in 12th century, 687
 nations to whom art has been vital, 67
 Nature's majestic lines the basis of all ornament, 3891
 nude figures first introduced in Aegean art, 4024
 old masters the best teachers, 65
 Persian : see Persian art
 pictures whose claim to fame rests on their titles, 2543
 pointillism in French art, 3042
 Raphael blends pagan and Christian art, 826
 Renaissance : see names of schools, Florentine, and so on
 Russian : see Russian art
 sculpture : see Sculpture
 Siensec : see Siensec art
 simplicity the keynote of greatness, 196
 Spanish : see Spanish art
 surrealism in, 3046
 technique explained, 1559
 work of true genius is timeless, 2667
Artaxerxes I, Persian king whom Nehemiah served as cup-bearer, 6389
Artaxerxes III, Persian king who subdued Egypt, 6389, 6804
Artemia, winged seeds, 947
Artemis, goddess of Greece, 3516
 copy of Greek statue in Louvre, 4403
 Greek statue in Athens museum, 4026
 statue by Praxiteles, 4272
 statue from Delos, 4032
 See also Diana
Artemisia, queen, tomb of Mausolus built by, 4277, 4884
Artery, bleeding from, and how to stop it, 1186
 tying up of, by Ambrose Paré, 2504
 wall of, described, 1199
Artesian wells, how formed, 1413
 large artesian areas in Australia, 2569
Arthur, King, legends, 368, 6815, 6941
 Vischer's statue, 4644, 6735, 6740
 Arthur and his Knights, series, 6945-48
Artichoke, food value, 1436
 picture, 2438
 See Jerusalem artichoke
Artificial, all things are artificial, 2226
Artificial light, not so good as daylight, 1429
 objections to, 1097
Artificial silk, what is it? 5364
 discovery and processes, 4014, 4105
 See also Rayon and Silk
Art Lovers, painting by Meissonier, 3779
Arum, genus of order Aroidae, 6497
 wild : see Cuckoo-pint
Arundel, Sussex, castle, 1592
Aryans, civilisation said to have been founded by, 321
 European languages derived from, 563, 2943
 India, conquered by, 2943
 Kassites invade Babylonia, 6995
 origin of, 6510
Asafoetida, obtained from the ferula plant, 2689
Asbestos, Canada's production, 2324
 Cyprus exports, 3420
 Rhodesia's production, 3312
 Swaziland's production, 3312
 what is it, 6597
 why does it not burn? 5736
 blue, or Crocidolite, mineral, 1304
 specimen, 2005
Ascension Day, or Cricket Day, Florence festival, 4912
Ascension Island, South Atlantic, 3558
 Portuguese discovered, 5398
 sea birds on the shore, 3562
Ascetic, beliefs of, explained, 2030
Ascham, Roger, Queen Elizabeth's tutor, 1477
Ascidians, the class of, 5344
Asculum, battle of, 4794
Asgard, home of the Norse gods, 534, 2887
Ash, tree, member of genus *Fraxinus*, 6493
 fruit, has parachute, 948
 useful timber, 3787
 fruit, in colour, 3672
 tree, leaves and flowers, 3907
 See also Mountain Ash
Ashanti, British possession in West Africa, street in Kumasi, 3322
Ashar Creek, Iraq, 6275
Ashburnham House, Inigo Jones builds London mansion, 4223
Ashby-de-la-Zouch, Leicestershire, finger pillory at, 4860
Ashdod of the Philistines, view, 3465
Ashdown, battle of, Danes defeated by Alfred, 2906
Ashes, what are the Ashes? 2662
Ashridge House, Hertfordshire, 6252
Ashtroth, worshipped by Israelites, 2980
Ashurbanipal : see Sardanapalus
Ashurnasirpal, Assyrian king, sculptures from his palace, 3898, 3900
Asia, philosophers of, 5077
 British flags of, description, 6963
 effect of climate, 2029
 deserts of, 2375
 mental atmosphere compared with that of the West, 2029
 population, 2042
 map, in colour, 7094
 See also under names of countries
Asia Minor, westernmost peninsula of Asia, Greek defeat by Turks in, 6136
 See also Turkey
As I Walked by Myself, picture to nursery rhyme, 102
Askelon, view, 3466
Asoka, great Indian ruler of ancient times, 2944, 6995
Asp, species of cobra, 4620
Asparagus, genus of order Liliaceae, 6497
 how it grows, 2434
 picture, 2438
Asparagus beetle, insect, 6329
Asperococcus, compressed and prickly seaweeds, 3416
Aspen, tree, genus *Populus*, 6496
 use of wood, 3788
 why do the leaves shake? 3396
Asphalt, Trinidad's production, 3558
 digging from lake, 3560
Asphodel, bog, flower, 5891
Aspiration, vision not same thing, 1360
Asplund, Gunnar, Swedish architect, 6612
Asquith, H. H., English statesman, 1706, 2138
 portrait, 1705
Ass, native of the Old World, 1899
 origin of domestic species, 1900
 South Africa rears, 3187
 Asiatic wild ass, 1895
 Somaliland wild ass, 1897
 See also Donkey
Assam, N.E. Indian province, 2621
Assam rubber tree, member of Fig family, 2568 2567,
Ass and the Dog, fable, 4116
Asshur, Assyrian god, sculpture, 3898
Ass in the Lion's skin, fable, 4246
Assiout, town of Upper Egypt, picture, 6880
Assisi, cathedral city of central Italy, 568, 573
 church of St. Francesco, 5993, 6000
Assize court, what it is, 4775
Association Football, how to play, 4950
 playing positions, diagram, 4948
Association of ideas, what it means, 4036
Assouan, Egypt : see Aswan
Assumption, The, Correggio's painting in dome of Parma Cathedral, 936
Ass with a Sore Foot, fable, 3624
Assyria, Egypt overrun by kings of, 6877
 enemy of Israel, 2978
 great prosperity of, 2855
 Israel conquered by, 545
 Medes and Babylonians destroy, 6386
 Pictures of Assyria
 a cylinder of Sennacherib, 6864
 historical events, 6272
 map, in colour, 7093
 palace of a king, in colour, 320
 Sennacherib's palace, 5375
Assyrian Art, absence of nude figures explained, 4024
 architecture, 5377
 brute activity compared with repose of Egyptian art, 3901, 3902
 enamel plays great part in, 6738
 sculpture series, 3898-3900
Astata, ox-eyed, insect, in colour, 5714
Astbury, John, first to manufacture cream-coloured pottery, 302
Aster, genus of order Compositae, 6493
 various species of flower, 5761, 6381, 6383-84
Asterium, element, 2918
Asteroids, what they are, 3118
As the crow flies, what does it mean? 5493
Astor, Viscountess, first woman to enter Parliament, 1824
Astragalus, genus of order Leguminosae, 6492
 tragacanth obtained from, 2938
Astrakhan, Russian port, Russia annexes, 5893
Astrology, preceded astronomy, 426
Astronomical day, what it is, 5122
Astronomy, first students of, 3487
 Copernicus's theory, 3488
 first English book, 3491
 Galileo's discoveries, 3610
 Kepler's Laws, 3492
 measurement of star distances, 2990, 2995
 pioneers of, 3609
 statistics of the heavenly bodies, 7081
 year measured by, 3487
 planetarium at Moscow, 6026
 See also Earth ; Moon ; and names of other heavenly bodies
Asuncion, capital of Paraguay, on the Paraguay River, 7016
 government palace, 7013
Aswan, Egypt, quarries for stones of the Pyramids, 6874
Aswan Dam, Egypt, 6873, 5976
As You Like It, Shakespeare's most charming comedy, 984, 8047
Rosalind and Celia in Forest of Arden, 1103
Rosalind gives Orlando a chain, 1103
Touchstone and Audrey, 6045
Atacama Desert, Chile, 2375
 great nitrate deposits, 7006
Atacamite, chloride of copper, 1302
Atalanta, myth, sculptures, 4395, 4651
Ataturk, Ghazi Mustafa Kemal : see Kemal, Mustafa
Athanasian Creed, not compiled or mentioned by Athanasius, 1386

Athanasius, St., one of the fathers of the Christian Church, 1385
 portrait, 1385
Athelhampton Hall, Dorset, 6236
Athelney, Isle of, Alfred a fugitive from Danes (in 876), 2906
Athene, or Minerva, goddess of ancient Greece and Rome, 3510
 statue by Phidias for Parthenon, 4142
 statue formerly in temple on Island of Aegina, 4028
 who was Pallas Athene? 4267
 sculptures, 4141, 4274
 statue in Vienna, 4560
 temple of Pallas Athene, 3515
Athenodorus, Greek sculptor, part creator of the Laocoön group, 4396
Athens, Ancient, Attic art's centre, 4138, 5496
 destruction by Persian Army under Xerxes (480 B.C.), 4027
 divine loveliness of Athens lies in restraint and simplicity, 1290
 fleet of, 3123
 influence on art diminishes after Peloponnesian War, 4270
 Ionic branch of Greek people originally centred at, 4024
 Rome's glory not comparable, 1786
 sculptures by Phidias in the ancient Parthenon, 4143
 statue of Artemis one of the oldest specimens of Greek sculpture, 4028
 stones set up in Quarter of the Tombs show delicacy of Greek art, 4277

Pictures of Ancient Athens

Acropolis, 5778-9
 Acropolis and Temple of Zeus, 5765
 ancient buildings, 5505-6, 5508, 5510
 Arch of Hadrian ruins, 5777
 Plato with his pupils, 1289
Athens, Modern, capital of Greece, 5768
 heads by Scopas in museum, 4277
 Venetians besiege (in 1687), 4143
 cathedral, 5767
 church of St. Eleutherius, 5767
 church of St. Theodore, 5767
 seen from the Great Stadium, 5778
Athlete, alcohol avoided by, 2681
 use of energy essential to, 1616
 vegetarian can be an athlete, 2558

Pictures of Athletes

sculpture by Canova, 4651
 sculpture in Vatican, 1615
 statue from Baths of Diocletian, 5010
 struggling with python, sculpture, 4653
Athlone, Ireland, scene, 3070
Atkinson, Edward Leicester, Antarctic explorer, 6560
Atlantic cable, how is a fault found? 930
 See also Telegraph cable
Atlantic Charter, 1943, 6478
Atlantic Ocean, area of, 2495
 cable first laid across, 1603, 1604
 depths of, 2413, 2495
 lost continent below, 518
 soundings, 2413
 steamer first crosses, 3214
 wireless signal first sent across, 2093
Atlantides, mythological maidens, 3531
Atlantosaurus, size of, 1508
 See also Dinosaur

Atlas, mythological giant, 3531
 holding the world on his shoulders, 217
Atlas, cloud atlas published, 2921
 new game with the atlas, 1120
 of England, 7109-52
 of the world, maps in colour, 7077-7108
 See maps under names of countries
Atlas moth, wing-span, 6199
Atlas Mountains, Africa, 6744
 fable of, 3531
Atmosphere, gaseous matter round the Earth and heavenly bodies, Moon's atmosphere, 3482
 part of the Earth, 2043
 units of measurement, 7071
 what is the stratosphere? 5372
 See also Air and Atmospheric pressure
Atmospheric engine, Newcomen's, 3210
Atmospheric pressure, explained, 5197
 barometer foretells weather by, 5199
 boiling-point of water affected by, 1175
 everyday things worked by, 5201
 how to feel, with diagram, 251

specific gravity and, 4954
Atom, studies in nature of, 6312
 composition, 4101
 definition of, 4099
 different light given off by, 5818
 electricity in, 4346
 everything composed of atoms, 114
 haemoglobin composed of atoms, 942
 light caused by movement of, 5690, 5815
 meaning of atomic numbers, 4222
 movement of, 4100
 nucleus and electrons, 4221
 solar system in miniature, 108
 splitting to obtain power, cost, 4811
 Bragg model showing arrangement of atoms in a crystal, 2592
 how electric power is produced, sectional drawing, 4812
 See also Electrons and Matter

Atomic Bomb, in war, 1948, 6621
Atomic Energy, power of the future, 4811
Atomic number, meaning of, 4222
Atomic theory, Dalton founds, 6312
Atomic weights, of elements, 4222, 7073
Aton, ancient Egyptian sun-god, 6801
Atropine, whence obtained, 2690, 4290
Atropus, one of the Fates, 3518, 6937
Attalus, King, founded school of statuary at Pergamum, 4396
At the gates, origin of phrase, 243
At the lions, origin of phrase, 243
Attica, Greece, bronze mirror from Sunium, 6985
Atticus, Titus, Roman scholar, 4354
Attila, king of the Huns, 2153
 bishop appealing to, 2155
 Huns charging in battle, 2153
 marching on Paris, 2154
Attlee, Clement, statesman, 2138
Aubert, Joseph, paintings by: Holy Family, 3593; Last Supper, 4701
Auckland, city and port of North Island, New Zealand, 2694, 2693, 2704
Auden, Wystan Hugh, English poet, 4034
Auditive, what is meant by, 4150
Audrey, in Forest of Arden, 6045
Audubon, John James, American naturalist, 5574
Auerbach, Boniface, portrait by Holbein, 1190
Auerstadt, battle of, Napoleon defeats Prussians, 1456
Augereau, General, served with Napoleon for nearly 20 years, 1442, 1444
Augsburg, Bavarian city, Protestants and Romanists sign peace (in 1555), 4005
 Holbein begins painting at, 1193
August, name celebrates Emperor Augustus, 1538, 5339
Augustan Age, when it was, 1538
 why so called, 2876
Augustine, St., first archbishop of Canterbury, 2278, 2644
 his book, *The City of God*, 2478
 mission to Kent, 6919
 story of Not Angles but Angels, 504, 2278
 why British mission failed, 2646
 his chair in Canterbury Cathedral, 725, 4860
 reading philosophy, 571
 tells Bible story to King Ethelbert and Queen Bertha, 613
Augustine of Hippo, St., son of St. Monica; with his mother, painting by Ary Scheffer, 3535
August Moon, The, Lawson's fine landscape in the Tate Gallery, 2546
Augustulus, Roman name for Romulus Momyllus, 6838
Augustus, first emperor of Rome, 1538, 2876
 Caius Octavius his original name, 2876
 emperor in spite of himself, 1785
 Germans defeat his armies, 1538
 his reign the golden age of Rome, 4355
 nephew and heir of Julius Caesar, 2876
 portrait statue in the Vatican, 4404

Pictures of Augustus

August named after, 5339
 portrait on coin, 5391
 portraits, 1667, 2873, 2878
 sculptured head, 4399
 statues, 75, 5134

Auk, different species of, 4000
Aukrust, Olaf, Norwegian writer, 4940
Auld Lang Syne, old Scottish song modernised by Burns, 1283
Auld Robin Gray, song by Lady Anne Lindsay, 1285
Aunt Sally, game, 3476
Auratum lily, 6379
Aurelius, Marcus: see Marcus Aurelius
Auricle, of the heart, its work, 1198
Aurlands Fiord, Norway, 5159
Aurochs, species of cattle, 1152
Aurora, Antarctic relief ship, 6561
Aurora, classical demi-goddess, 3518
 Guido Reni's painting at Rome, 936, 938
 her love for Tithonus, 6938
Aurora Borealis, cause of its greenish colour, 5858
 connected with magnetic storms, 362
 effect on vegetation, 238
 what is the aurora borealis? 6843
 wonderful form, 6843
Aurangzeb, Mogul emperor who strove to bring all India under his rule, 2945
 mosque at Benares, India, 2955
Austen, Jane, English novelist, 2350
 portrait, 2349
 writing in her study, 2347
Auster, mythological name for south wind, 3519
Austerlitz, battle of, one of Napoleon's greatest victories, 1455, 4046, 4296
Austin, Alfred: see Poetry Index
Austin, Darrel, American painter, 3288
Austin, Lord Herbert, creator of industry, 4112; portrait, 4102
Australasia, smallest continent: see Australia, New Zealand, and so on
Australia, description, 2443, 2569
 animal life shows former connection with South America, 2444
 animals: see Australian ant, and so on area, 2448
 becomes part of British Empire, 2076
 Captain Cook's explorations, 2380
 coal production, 1384, 2836
 continent crossed for first time, 6071
 Dampier's doubts of it being a continent, 2380
 discoveries, 2377
 explorers, 6063
 first white men marooned, 2379
 flags, description of, 6963
 Flinders proved it a continent, 2382
 food supply of natives, 1435
 formation in early ages, 2444
 gold, 5858
 harbours lacking, 2444
 interior long a mystery, 2382
 life of a very ancient type found in, 2443
 name also applied to Madagascar and New Hebrides, 2377
 named by Flinders, 2382
 named Little Holland by Dutch, 2379
 novelists, 4336
 oldest land rising above ocean, 2443
 Parliament, 2448
 penal settlement (in 1788), 2381
 poets, 4205
 population, 2446, 6004
 Portuguese names on early maps, 2377
 prickly pear invasion, 1066
 rainfall one of country's great problems, 2444, 2451
 resources, 6005
 Second World War, part in, 1944
 sheep flocks, 799, 1277
 sheep killed by dingoes, 694
 volcanoes extinct, 2444
 wool production, 799, 6005

Pictures of Australia

Aborigines, 2084, 2445
 Adelaide, King William Street, 2578
 arms, in colour, 4985
 artesian bore in N.S.W., 2577
 Boloco Gorge, New South Wales, 2580
 bottle tree, 3057
 camel loading, 2589
 Canberra, Parliament House, 2573
 cattle drinking at stream, 2449
 cattle on banks of Club Lake, 2571
 colliery in Queensland, 2455
 emu, 2456
 eucalyptus tree, 2682
 ferns, 2373
 flags, in colour, 6965, 6967

fruit drying in Renmark, 2454
 fruit orchard, 1819
 gold mine in Kalgoorlie, 2577
 Guy Fawkes Falls, Armidale, 2580
 Hawkesbury River, 2571
 hemp field, Queensland, 2560
 homestead in New South Wales, 2577
 Hume Weir reservoir, 2580
 irrigation, 5972-74
 irrigation canal through orchard, 2580
 jarrah trees in Darling Ranges, 2374
 kangaroos, 2456
 koala bear family, 2456
 logs being hauled, 2447
 Melbourne, scenes, 2578-9
 merino sheep, 799
 Mount Kosciusko, 2580
 native warriors of Kimberley, 2445
 office buildings at Sydney, 6616
 officers at occupation of N.S.W., 2082
 oxen hauling timber, 1153
 Perth, Western Australia, 2578
 pineapple plantation, Queensland, 1812
 platypus swimming, 2456
 Port Pirie, 2579
 raisins drying, 1819
 shady nook in Alps, 2373
 sheep farm scenes, 801-804
 sheep flock, 2569
 sheep rounded up for shearing, 802
 signs on rocks made by Aborigines, 921
 smelting works at Port Pirie, 2455
 stalagmites and stalactites, 6845
 sugar-cane loading, N.S.W., 2447
 surf-riding in Sydney, 2580
 Swan River scene, 2580
 Sydney Harbour, 2443
 Sydney Harbour Bridge, 553, 2579
 threshing a wheat-field, 1575
 vanilla plantation in Queensland, 2807
 Waterfall Gully, near Adelaide, 2571
 wheat-field being cut, 2454
 wool transportation, 804

Maps of Australia

animal life of the country, 2452, 2453
 general and political, 2450
 in colour, 7107
 physical features, 2451
 plant life of the country, 2451
 See also names of States and Towns
Australia House, Commonwealth headquarters in London, 6615
 Australian ant, nest, 5965
 Australian barn owl, 3501
 Australian bear : see Koala
 Australian bent goose, 3752
 Australian cat, characteristics, 2392
 Australian crane, 3873
 Australian dingo, 541
 Australian jacana, bird in colour, 3144
 Australian mouse, characteristics, 2392
 Australian opossum, 2396
 Australian oriole, 2893
 Australian pelican, 3749
 Australian tree-frog, amphibian, 4741
 Australian wren, bird, in colour, 3143
Australopithecus, discovery during search for Missing Link, 2539
Austria, republic of Central Europe,
 general description, 4545
 effects of World Wars, 1710, 4549
 fall of, 898
 Hungary granted self-government, 896
 Italy lost to, 896
 League of Nations and finance of, 4549
 meaning of name, 4293, 4545
 Napoleon's victories over, 1442, 1454, 1457
 poets, 4699
 Venetia overrun by, 4786

Pictures of Austria

flag, in colour, 6972
 peasant types, 4566
 railway engine, 3510
 scenes, 4558-61

Maps of Austria

in colour, 7090
 physical features, 4557
Authorised Version : see Bible
Authority, Man's final authority the
 Fatherhood of God, 2723
 derived authority as expressed in a policeman, 2725
 international authority, 2724
 Shakespeare on, in King Lear, 2723

Autobiography of Benjamin Franklin, story of the book that began American prose, 4331
Autoclave, vessel used in candlemaking, 1669
Automatic telephone : see Telephone
Autoplate machine, use in printing, 2410
Autumn, Brueghel's wonderful landscape in Vienna Museum, 1058
 why do leaves change colour in the autumn ? 6106
 children of autumn, 267
 painting by Jules Dupré, 3775
 stars in autumn, 2993
Autumnal hawkbit : see Meadow hawkbit
Autumnal squill, 5713
Autumn lady's tresses, 5268
 flower, in colour, 5396
Autumn Nutting Party, 2981
Auvergne, old province of central France, 4164
Avebury, Lord, discovers that insects do not respond to sound, 1048
Avebury Circle, Ancient British stone circle, 6997
Avens, mountain, feathered seed, 947
 mountain, flower, in colour, 5642
 water, flower, in colour, 6130
 common : see Herb benet
Avenue at Middelharnis, The, greatest landscape picture in the world, 1426
Averroës, Spanish-Arabian philosopher, 5676
Avesta, sacred books of Zoroastrian religion, 5675
Aviation, sculpture by Bertrand-Boutée, 5130
 See Aeroplane : Airship, and so on
Avicenna, Arab philosopher and writer on medicine, 5678
Avicula, shells, 1179
Avignon, historic city of Provence, France, 6358
 church of Notre Dame, 5746
 colony of artists gathered round court of the Pope, 1058
 palace of the Popes at, 4170, 6358
 bridge across Rhone, 4052
 cathedral, 5748, 5753
 palace of Popes, 4175, 6368
Avila, ancient city of central Spain, architecture of cathedral, 5994
 general view, 5284
Avocet, bird, haunts of, 3874, 3875
Avogadro, Count Amadeo, Italian chemist, 6312
Avoldupois weight, 7069
Avo Lancastrian, airliner, 433
Avo Tudor VIII, jet airliner, 4687
Avo York, airliner, 435
Axe, why is handle curved ? 6101
Axis, tilt of Earth's, 2741
Axolotl, amphibian, in Mexico, 4745
 picture, 4745
Aye-aye, animal, characteristics, 166
Aylesbury, capital of Buckinghamshire, arms, in colour, 4990
 view, 1834
Aylesbury duck, group, 3752
Aylesford, Kent, founding of England at battle of Aylesford, 592
 Kit's Coty House, 597
Aymara Indians, 7012
Aymon, four sons of, legend of Ardennes, 5648
Ayr, capital of Ayrshire, arms, in colour, 4990
 two bridges, 1337
Ayrton, Professor, on future of wireless telephone, 2218
Ayuthia, town of Siam, 6513
Azalea, trailing, flower in colour, 5641
Azara's dog, home and food, 540
Azay-le-Rideau, French chateau, 6358
 mantelpiece, 6359
Azerbaijan, republic of U.S.S.R., 6014, 6024
 maps, 5904, 5908
Azores, group of volcanic islands in the North Atlantic, 6402
 Grenville's last fight at Flores, 5208
Azov, Sea of, Peter the Great's ships in, 5894
Aztecs, tribe of Mexico, 2316, 6996, 7000
Azure blue butterfly : see Holly Blue
Azurite, carbonate of copper, 1303

B

Baal, Elijah's test of power, 2482
 Israelites and, 2481, 2980
 Roman temple in Syria, 5511
Baalbek, Lebanon, 6270
 temples built by Romans, 5504
 temple of Bacchus, 5512
Babar, founder of Mogul Empire, 2944
Babbage, Charles, calculating machine invented by, 6840
Babbler, bird family, 3145
 chestnut-backed, in colour, 3141
Babes in the Wood, story, with picture, 1519
 nursery rhyme, with picture, 356
Babirusa, kind of pig, 1658, 1657
Baboon, habits and home, 166
 worshipped by ancient Egyptians, 166
 anubis and chacma baboons, 161
 yellow species, 164
Baby, impure milk danger, 2308
 medicine given in mother's milk, 2308
 milk the main need, 2308
 size of brain, 1691
 skull the widest part of its body, 1691
 how to crochet a shawl for, with pictures, 3473

Wonder Questions

why can't a baby talk when born ? 6600
 why must a baby have more sleep than a grown-up ? 1920
 why must a baby learn to walk ? 2415
 See also Child
Babylon, capital of Babylonia, home of a very early civilisation, ancient city described, 3102, 5379
 architecture, 5376
 clay tablets for writing, 2034
 cultured inhabitants, 428
 Cyrus captures, 3102, 6386
 deciphering of cuneiform inscriptions, 6869
Hammurabi's laws, 428, 6800
 Hanging Gardens, 4884, 5377
 Israelite captivity, 2980
 Judah conquered, 545
 laws recorded on stone pillars, 2034
 origin of cuneiform characters, 6869
 remains of oldest schoolhouse in the world, 5735
 slavery the basis of its civilisation, 428

Pictures of Babylon

boundary-stone, 3898
 By the Waters of Babylon, painting by Herbert Schmalz, 2231
 Hanging Gardens, 4888
 king giving commands, 3899
 ruined walls, 6865
 sculpture, 3898-3900
Babylonia, map in colour, 7093
Babylonian art : see Assyrian art
Baby who Could not be Lost, story, 6814
Bacchus, or Dionysus, god of ancient Greece and Rome, 5517
 temple at Baalbek, Syria, 5512
Bacchus and faun, sculpture, 4401
Bach, Johann Sebastian, German composer, 144, 145
 copying music when a boy, 2985
Bacillus subtilis, hay fever microbe which sets stacks on fire, 5733
Backbone, animals with : see Vertebrate animals without : see Invertebrate
 beginning in primitive creatures, 1011
 body built upon, 455
 classes of animals with, 451
 first appearance on Earth, 10, 42
 importance to human body, 1568
 spinal cord in centre, 1569
 diagrams of human spine, 1567
 earliest animals with, 451
Backing, in meteorology, what is meant by, 6721
Backstitch, how to do, with picture, 2360
Bacon, Francis, English philosopher and author, 2969, 4839
 his tree in Gray's Inn, London, 3543

Pictures of Francis Bacon

in the hour of his disgrace, 4836
 portrait, 1077
 portrait, with father, 4135
 statue in Gray's Inn, 1222
 with Queen Elizabeth, 4836

- Bacon, Sir Hickman**, coat-of-arms, 4987
Bacon, John, English sculptor, 4767
Bacon, John H. F., painting of sleeping disciples, 4703
Bacon, Sir Nathaniel, early English painter, 1928
Bacon, Sir Nicholas, Francis Bacon's father, 4839
 portrait, with son, 4135
Bacon, Roger, English philosopher and monk, 1599
 encyclopedia given to England in 13th century, 840
 inventions foreseen by, 19, 3508, 4445, portrait, 1385
Bacon beetle, in colour, 6335
Bacteria: see Microbe
Bactrian camel, characteristics, 1525
 picture, 1532
 team crossing lake, 1525
Bacubirito, Mexico, giant meteor, 3608
Badajoz, siege of, story of Sir Harry Smith's Spanish wife, 3187
Badaria, oldest civilisation known, 6860, 6867
Baden, Germany, map, in colour, 7087
Badge: see Heraldry
Badger, habits and food, 793
 American, 790
 English, on the alert, 789
Badminton, how to play, with pictures, 5685
Bad News from France, painting by Verestchagin, 3398
Baelkand, Dr. Leo Hendrick, Belgian chemist, invention of plastic, 4009
Baeyer 145, remedy against sleeping sickness, 4471
Baffin, William, English Arctic explorer, 4602
Bag, how to make a silk bag for pot-pourri, 1744
 how to make a string bag, with picture, 1992
Baganda, natives of Uganda, 3316
Bagehot, Walter, English economist and political writer, 3831
Baggesen, Jens, Danish comic poet, 4939
Baghdad, capital of Iraq, 5622, 6268
 becomes seat of Caliph, 6267
 British capture, 1709, 6266
 tomb of Haroun-al-Raschid's wife, 5624
 boat crossing the river Tigris, 6263
 scenes, 6275
Bag of Peas, story, 289
Bahama Islands, West Indies, 3554
 flag, in colour, 6967
 general map, 7030
 government buildings at Nassau, 3561
 map, in colour, 7103
 silk cocoons, Nassau, 3557
Bahama Lights, flag in colour, 6967
Bahia, Brazilian port, 7016
Bahrein Islands, Persian Gulf, 6266
Baikai; Lake, Siberia, 6905
Bailey, Philip James: see Poetry Index
Baillie, Joanna: see Poetry Index
Baily, Edward Hodges, maker of statue on Nelson Column, 4228
 designed Imperial Chemical House and Thames House, 4230
Baird, John Logie, Scottish inventor, his first television set, 2339
Baird, N. H. J., his picture, Red Indians on watch, 1902
Baker, Sir Benjamin, English engineer, 548, 2756
Baker, Sir Herbert, architect, 6610-11
 designed new Bank of England, 4230
India House, London, designed by, 6614
Baker, Sir Samuel, English explorer, 3006
 fleeing from elephant, 3003
 portrait, 2997
 setting free African slaves, 3003
Baker, T. Thorne, pictures telegraphed, 855
 telegraph invented, 1476
Baker's dozen, what is it? 5251
Baking, how to bake and decorate a cake, with picture, 1121
Baking soda: see Sodium bi-carbonate
Baku, Azerbaijan, petroleum fires worshipped by ancients of, 2962
 oil derricks, 2961, 6029
 square, 6028
Balaam, false prophet, 1244
Balacava, trumpet which sound charge at battle of, 4862
 general view, 6027
Balak, King, opposed Israelites, 1244
Balance, feats of balancing, with picture, 3349
 organs of balance described, 3405
 trick with pencils, 128
Blondin crossing Niagara, 3407
 canals, whole and in section, 3405
 See also Equilibrium
Balancing Bird, how to make, with picture, 1743
Balanoglossus, worm-like sea creature, 5348, 5347
Balausta, in botany, 6495
Balawat, gates discovered by Hormuzd Rassam, 6870
 fragments of gates, 6865
Balboa, Hill of, Panama Canal seen from, 7013
Balboa, Vasco Nuñez de, Spanish soldier and explorer, 1020, 7000
 starting America's first colony, 1012
Baldwin, John, Abraham Lincoln's friend, 1640
Baldwin, Stanley, English statesman, 1826, 1828, 2138; portrait, 1823
Baleatic crane, bird, 3873
Balearic Islands, history, 5411
 map, in colour, 7085
Balen whale, sea monster, 5227
Bales, Peter, shorthand teacher in Elizabeth's day, 6844
Balfour, Michael William, Irish composer, 1266
Balfour, Lord, first Prime Minister in this century, 1705, 2138
 portrait, 1705
Baliol, John, Scottish throne claimed by him, 894
Balistides, curious fish family, 5234
Balkans, Russia frees, 4622
 map, in colour, 7089
 See also Rumania, Bulgaria
Balkan War (in 1912), 4555
Ball, games for the garden, 2859, 3596
Haitian natives' gum balls, 1165
 how to make paper decoration, with diagrams, 6669
 trick of ball that answers questions, with picture, 4591
 trick of floating ball and a lively apple, 3232
 trick of vanishing and reappearing, with picture, 2486
 why it falls when thrown into air, 4596
 wooden ones that twist and turn, 1990
 Wonder Questions
 what do the three balls over a pawn-broker's shop mean? 5490
 why does a ball bounce? 307
Ballad, handed down by memory, 239
Ball and socket joint, 6352
Ballantyne, James, Sir Walter Scott's schoolfellow and partner, 2011
Ballan Wrasse, fish, in colour, 5097
Ballarat, Australia, street made to allow bullock teams to turn, 1153
Ball bearings, 6352
Balleny, John, English explorer in the Antarctic, 1839
Ball in the Hollow Post, story, 5707
Balliol College, Oxford, arms, in colour, 4988
Ballonet, goldbeater's skin fabric, 6106
Balloon, development, 4445
 early experiments, 19
 how to make a hot-air balloon, with picture, 2233
 little balloons used in aerology, 6721
 soap bubbles used in first experiments, 312
 why it rises, 4954
Ballot paper, what it is, 4408
Ball, Sir Robert, English astronomer, 3111
Balm of Gilead, obtained from balsam tree, 2938
Balmoral Castle, royal residence on the Dee, Aberdeenshire, 1338
Balsam, of genus *Impatiens*, 6492
 how the seeds are dispersed, 945
 produces balm of Gilead and myrrh, 2938
 flower, 4778
 seeds expelled from case, 949
Baltasar, journey to Bethlehem, 3590
Balthasar or Baldassar, Castiglione, portrait by Raphael, 824
Balti, race of India, 2072
Baltic, battle of the: see Copenhagen
Baltic States, map, in colour, 7091
 See also names of individual States
Baltimore oriole, bird, with gourd shaped nest, 2895
 in colour, 3142
Baluchitherium, largest of bygone creatures, 5860
Balzac, Honoré de, French novelist, portrait, 4453
Bamboo, enormous height, 2940, 3303
 filament in electric lamp, 1098
 growth visible to naked eye, 579
 cultivated forest in China, 2936
 in Ceylon, 2937
Bamburgh Castle, Northumbrian coast, Oswald's palace on a rock, 2778
Banana, cultivation and growth, 1436, 1818, 2621
 cutting, in Jamaica, 3557
 gathering the bunches, 1812
 tree, in colour, 2688
Bancroft, George, American historian, 4336
Bandak Nordsko Canal, Norway, steam boat in lock, 4879
Bandfish, red in colour, 5099
Bandicoot, characteristics, 2391
 rabbit-eared, 2394
Band saw, 6352
Bangkok, capital of Siam, 6513
 Buddha and his pupils, 2029
 Royal Palace, 6516
Bangor, city of Carnarvonshire, 5872
 arms, in colour, 4990
 general view, 1460
Bangweulu, Lake, Rhodesian lake discovered by Livingstone, 3003
Bank of England, builders of old and new, 4230
Bank of England Crossing-sweeper, story, 2886
Banks, George Linnaeus: see Poetry Index
Banks, Sir Joseph, English naturalist, 1576
Banks, Thomas, English sculptor, 4767
Banner, rank denoted by size, 5246
Bannockburn, battle of, 952
Banquo, in Shakespeare's *Macbeth*, 6166
Bantam fowl, picture, 4253
Bantin, Javanese ox, 1155, 1159
Banting, Sir Frederick, insulin discovered, 3176; portrait, 2628
Bantry Bay, Ireland, 3062
Bantus, Negro stock, conflict with Boer farmers, 3184
 woman making bread, 3192
Banyan tree, member of Fig family, 1936, 2372, 2568, 3051
 huge specimen, 3051
Baobab tree, related to mallow, 3052
 South African specimen, 3057
Baptista, in Shakespeare's play, *The Taming of the Shrew*, 6044
Baptist Missionary Society, 1138
Barabbas, in Bible, 4706
Barak, defeats Sisera, 1365
Barbados, West Indian island, 3555
 flag, in colour, 6967
 native with crushed sugar-cane, 3557
 scenes, 3553, 3559
 where first Englishman landed, 3561
Barbara Fretchie, picture to poem, 4679
Barbara, St., lovely carving at Nuremberg, 4044
Barbary ape, Gibraltar its lair, home in Europe, 165
 with young one, 162
Barbary pirates, who were they? 5371
Barbary sheep, wild African species, 1285, 1282
Barbault, Anna Letitia: see Poetry Index
Barbel, member of Carp family, 4979
 picture, in colour, facing 5197
Barber of Seville, play by Beaumarchais, 4456
Barberry, member of genus *Berberis*, 6491
 source of wheat rust, 1576
 stamens sensitive to touch, 586

flower, in colour, 4907
leaf affected by rust, 1573
wild fruit, in colour, 3665
Barber's pole, what does it mean? 5251
Barbet, bird, habits and food, 3258
blue-faced, picture, in colour, 3144
groove-billed, in colour, 3261
Barbizon, French landscape painters' resort, 2790
Barcelona, Spain, architecture of cathedral, 5994
siege, 5411
Spanish industrial city, 5278

Pictures of Barcelona

donkey cart in streets, 5275
selling goats' milk, 5275
the Rambia, main street, 5282
Barcelona nuts, fruit of Spanish hazel, 2068
Bare-eyed cockatoo, bird, 3499
Barents, William, Dutch Arctic explorer, 4601
writing diary in Nova Zembla, 4599
Barge, used on canals, 4866
Barger, Professor, work on thyroxin, 3174
Barham, Richard Harris, English poet, 3956; portrait, 3953; see also Poetry Index

Bari, port of Italy, 4910
Baring, Maurice, English writer, 3829; portrait, 3827; see also Poetry Index
Baring-Gould, Sabine, English novelist and writer of hymns, 1760
See also Poetry Index

Bark, why does it grow on a tree? 5252
Bark, Peruvian, plant in colour, 2687
Barker, Collet, Australian explorer, 6068
Barker, George, British poet, 4084
Barlass, Kate, heroic attempt to save king, story, 6952

Barley, story of, 1698
ancient Egyptians cultivated, 427
grown in England for alcohol, 2429
number of grains to bushel, 1698
origin, 1435
use for malting, 1698
cereal grown for food, 1696
grain seen through microscope, 1910
meadow, grass, 3305
wall, 582

Barmen-Elberfeld railway, overhead railway in Germany, 4427

Barmouth, Merionethshire, 347
Bar nabas, St., guides Paul to Peter, 6053
work at Antioch, 6298

Barnacle, crustacean that fastens on ships, 6480
inside its shell, 5479
plumes seen through microscope, 1914
shell, 6580

Barnard, George, American sculptor, Two Natures, sculpture, 5013

Barnes, William, English poet, 3954
See also Poetry Index

Barnett, Henrietta, help in experimental garden cities, 6609

Barnoin, Henry, Boats at Concarneau, painting, 3774

Barn owl, bird of prey, in colour, 2768
Australian, 3501
young, 2639

Barogram, what it is, 6721
Baroja, Pio, Spanish writer, 5059

Barometer, height of mountain can be measured by, 5199, 309
how to make, with picture, 2607
principle of working, 5199

used in weather forecasting, 6721
aneroid barometer, 5197
height of mountain measured, 5199

Baron, coat-of-arms, in colour, 4987
coronet, 4986

Baron, Bernhard, creator of industry, 4108; portrait, 4102

Baronet, coat-of-arms, in colour, 4987
helmet, 4986

Baron's Last Banquet, picture to poem, 2205

Barotseland, African State, 3314
Barraquilla, port in Colombia, 7010

Barr, Matthias; see Poetry Index
Barras, French revolutionist, 4371
Barren brome, grass, 3308
Barren strawberry, member of genus *Potentilla*, 6492

Barrias, Felix Joseph, Esther pleading for her people, painting, 3224

Barrie, Sir James, Scottish author, 404, 3711
address on courage, 2250
who was Peter Pan? 2663

portrait, 399
Barriester, professional duties of, 4777

Barrow, Sir John, promotes Arctic exploration, 4804

Barrow, why it has only one wheel, 4998
Barry, Sir Charles, English architect, designed Trafalgar Square and Houses of Parliament, 4228

Barry, Sir John Wolfe, Tower Bridge planned by, 4230

Bartholomé, Paul Albert, French sculptor and painter, 4647
monument to the dead, 5136

Bartholomew, St., apostle of India and Arabia, what is known of him, 6791
his portrait, 6787

Barthia Grove, British Guiana, scene, 3562
Barthlet, Robert, Newfoundland ice-master, Peary's ship's captain, 6441

Bartoli, Taddeo, early Siennese painter, 568
St. Francis, painting, 572

Bartolini, Lorenzo, Charity, sculpture by, 5012
Grief, sculpture, 5008

Bartolommeo, Fra, Florentine painter, 4730
Raphael influenced by him, 819, 826

Raphael's friend, 6191
Bartolozzi, F., portrait by Opie, 2175

Bartoluccio, Florentine goldsmith who taught Ghiberti, 4718
Bartonia, flower, 6378

Barton-on-Humber, Saxon tower, 5865
Bartsia, plant of genus of order Scrophularineae, 6493

Alpine, flower, in colour, 5642
red, flower, in colour, 5644

Barye, Antoine Louis, French sculptor, 4648
Arab killing lion, sculpture, 4652

lion and serpent, sculpture, 4656
Barytes, sulphate of barium, 1304
Basalt, importance of, 517

columns, Giant's Causeway, 2007
Basel; see Basle

Basenji, barkless dog, 670, 5366
Basil the Great, St., painting by El Greco, 1311

Basil, wild, flower, in colour, 4420
Basilica, meaning of word, 5504

plan of early basilican churches, 5739
Basilisk, harmless lizard, 4495, 4492
Basil thyme, member of genus *Calamintha*, 6496

member of Labiate family, 5022
in colour, 5143

Basing House, Inigo Jones fortifies Hampshire mansion, 6241

Basket, how to make a fern basket, with picture, 2361
Red Indian craftsmanship, 198

made from esparto grass, 5273
Maltese girls weaving baskets, 3431

Basking shark, harmless sea-monster, 5227, 5229

Basle, or Basél, Swiss city and railway centre, 4673
Erasmus at, 4956

Holbein's life at, 6673
Holbein's wonderful drawing in museum, 1194

office buildings, 6616
the Spalenter, 4667

Basques, small but virile race, dwelling at western end of the Pyrenees, 5272
old peasants, 5277

Basra, port of Iraq, 6268
rivers, 6275
river scenes, 6274

Bass, George, English navigator, 2382
Bass, fish, habits and food, 5101
picture, 5105

Bass, Stone, fish, in colour, 5098
Bassanio, in Shakespeare's Merchant of Venice, 6041

Bassaricyon, American animal, 792
Bassett-hound, 667

Baste the bear, game, 3476

Bastien-Lepage, Jules, French painter, 2928

haymakers at rest, painting, 2929
old beggar-man, painting, 2927

Bastille, Paris's old prison-fortress, 3922
storming of, 4043
what was the Bastille? 4387

Basuto, native of the Transvaal, 3188
part in Second World War, 3312
woman preparing pottery clay, 3323

Basutoland, South African territory, general description, 3311
Bat, story of, 291

where do bats go in the daytime? 4890
on tree, 291
various species, 290

Batalha, chapel of Portuguese monastery, 5413

Bat and ball game, 14th-century manuscript drawing, 1923

Batavia, Netherlands Indies, 5528, 5532
scenes, 5542

Batavian Republic, formed by the French, 5530

Batavians, ancestors of the Dutch, 5526
Bates, David; see Poetry Index

Bates, Harry, his sculptures: Homer singing his immortal lays, 4656
hounds in leash, 4649

Pandora's box, 4769
Psyche and **Zephyr**, 5579
Socrates, 1162, 1163

Bates, Henry Walter, Amazonian alligators described by, 4491
experience with an ant-eater, 2273

Bates's monhotia beetle in colour, 6336A

Bath, Somerset, houses designed by Wood brothers, 6471
Roman baths built like palaces, 5504

abbey, west front, 1714
arms, in colour, 4990

Bathing, things to remember, 5193
Bathsheba, David's wife, 1986

Bath-stone quarry, 5850
Bathurst, Australia's first inland town, 6064

Bathurst, capital of Gambia, 3318
Bathysphere, used for deep sea diving by Dr. Beebe, 6591

Battel, Andrew, English traveller, 2997
Battersea Bridge, Whistler's famous painting, 2930

Battersea Park, lake covered with pond weed, 3179

Battery; see Electric Battery
Battery, secondary or storage; see Accumulator

Battle of Britain, in Second World War, 1942

Battle of the Baltic, poem by Thomas Campbell, 1282, 3199

Battle of the Frogs and Mice, Greek parody on war, 5181

Battle of the Nations; see Leipzig
Batula, name given to benzoin, 2938

Batum, Georgian Black Sea port, 6108
Bauchi Plateau, Nigeria, famous tin-mining area, 3317

Baucis, story of Philemon and Baucis, 5086

Baudelaire, Charles Pierre, French poet, 4458

Baudry, Paul Jacques, French painter, 2930

Bauldour the Beautiful, story and picture, 6564

Bauxite, British Guiana's production, 3558

Bavaria, Germany, scenes, 4429-30, 4432, 4436
map, in colour, 7087

See also Germany
Bax, Clifford, English poet and dramatist, 3830, 4084

Baxter, George, English engraver, 3862, 3855

Baxter, Richard; see Poetry Index

Bayazid II, Sultan, mosque in Istanbul, 6141

Bayes, Gilbert, British sculptor, 4768, 5110

Bayeux Tapestry, the most famous embroidery in the world, 6739

Halley's comet pictured in, 3614

oldest picture of English history, 708

in colour, 709

Bayham Abbey, Tonbridge, 964

Bayle, Pierre, French writer, 4456

Bayliss, Dr., scientist, 2628, 3178
 Bayly, Thomas Haynes, English song writer, 1264; portrait, 1261
 Bayonne, France, cathedral, 5990
 Bayonne Bridge, U.S.A., 554
 Beachy Head, Sussex, view of cliffs, 1594
 Beaconsfield, Earl of: see Disraeli
 Beadlet anemone, in colour, 1554, 1555, 1556, 6697
 Beagle, hound, 670
 Beaked bacchus weevil, in colour, 6335
 Beaked nals, worm, 6827
 Beaker folk, ancient people who invaded Britain, 6997
 Beam wireless, discovered by Bellini and Tosi, 2096
 radar directing in, 2464
 used for long-distance telephony, 1726, 2220

See also Wireless

Bean, food value, 2432
 varieties, 2431
 broad, 2438
 butter, 2439
 scarlet runner, 2439

See also Soya bean, and so on

Bear, story of the, 785
 cave man's drawing, 193
 cave bear of Pleistocene Age, 1881
 various species, 785-90

See also Polar Bear; Sloth bear; and so on

Bearberry, common, flower, in colour, 5641
 wild fruit, in colour, 3666
 Bearded lichen, flowerless plant, 3408
 Bearded reedling, bird, in colour, 2768
 Beardmore Glacier, Antarctic ice barrier, 6554

Bear in the Well, story, 3494
 Bear Man, The, story, 3248
 Bearsted, Lord, a creator of industry, 4107; portrait, 4102
 Beatrice, Dante's ideal woman, 4582
 with Dante, sculpture, 5012
 Beatrice, in Shakespeare's *Much Ado About Nothing*, 6046
 Beatrice d'Este, 694, 689
 monument at Pavia, 6110

Beaufort scale, what it is, 6856
 Beaumarchais, Pierre Caron de, French writer of comedies, 4456

Baumaris, Anglesey, castle, 1952
 Beaumont, Francis: see Poetry Index
 Beaumont family, arms, 4987
 Beau Parc, carboniferous limestone gorge in Ireland, 5732

Beautiful horned Eucyteanus, beetle, in colour, 6336A
 Beautiful eupyrochroa, beetle, in colour, 6336A

Beauty, why we must educate ourselves to appreciate beauty, 1433
 climate's effect on perception, 2301
 creation an instinct of man, 796
 Greek idea of beauty, 1484, 1485
 instinct of the cave man, 194
 what is it? 680
 sleeping child, 1483

Beauty and the Beast, story with pictures, 151

Beauvais, old city of northern France, cathedral's splendid doors, 5988
 Palais de Justice, 6359
 Beauvais, Bishop of, Joan of Arc's chief judge, 2263

Beaver, habits and food, 1034
 once lived in England, 3030, 1031
 building a dam, 1029

Beaverbrook, Lord, wartime aircraft production chief, 1942

Beccaria, Giovanni, Italian electrical pioneer, 5327

Beccles, Suffolk, railway station swing bridge, 4199

Bechuanaland Protectorate, South Africa, 3312
 maps of physical features and industrial life, 3196

map, in colour, 7099
 Beck, Louis Westcott, experiences in Nevada desert, 5957

Becker, Carl, his painting of Maximilian and the Venetian ambassador, 4295
 Becker, Charlotte: see Poetry Index
 Becker, fish, in colour, 5097

Becket, Thomas, archbishop of Canterbury, 364

Becquerel, Antoine, French scientist, 6813; portrait, 6309

Bedckton, scenes in gasworks, 3447-50

Beddgelert, old bridge and mill, 1461

Bede, called the Venerable Bede, 6919
 his Ecclesiastical History, 594, 2905
 praise of Aidan, 2778

story of the Picts, 769
 teaching schoolboys at Jarrow, 487
 12th-century picture, 488

Bedevere, Sir, King Arthur's knight, 368, 6944

Bedford, capital of Bedfordshire, arms of the town, in colour, 4990

Bunyan's statue, 1833
 old prison on Bedford Bridge, 1477

Bedford blue butterfly: see Small blue butterfly

Bedford School, arms, in colour, 4989

Bedfordshire, county of England, places in, 7153
 view on Grand Union Canal, 1836
 road map, 7130

Bed of Ware, 4862

Bedouins, nomads inhabiting Arabia and the neighbouring countries, beggars in Tunis, 6747

Bedrasheim, Rameses II, statue near, 6861

Bedroom, windows should always be open, 1323

Bedstraw, of genus Galium, 6493
 mountain species, 5520

plants belonging to family, 2683
 lady's, flower, in colour, 4288

mountain, flower, in colour, 5641
 water, flower, in colour, 6129

Bee, honey bee and its kin, 5835
 absence of brain, 451

electric light affects, 268
 exported to fertilise fruit trees and clover, 6449, 6450

Isle of Wight disease, 5492
 pollinating flowers, 832

queen's life story, 329
 stinging kills a bee, 190

Wonder Questions

what makes a bee hum? 4268
 when bees take honey from flowers, do flowers get a new supply? 1801
 why does a bee sting? 190

Pictures of the Bee

comb on leg under microscope, 1914
 eye under microscope, 1910, 1915

foxglove fertilised by, in colour, 2046
 making comb, 5835

nests, 5834, 5843
 parasites under microscope, 1912

spiracle under microscope, 1912
 sting compared with needle-point, 1914

swarm on fruit tree, 5834
 tongue of queen under microscope, 1915

various species, 5714, 5839, 5843
 See also separate names: Humble bee; Mason bee, and so on

Bee beetle, in colour, 6336

Beebe, Charles William, American naturalist, study of marine life, 4333

Beech, fruit of tree insignificant, 2068
 what it is like, 3786

Knockholt Beeches, 2127
 nuts, how they grow, 2067

nuts, in colour, 3668
 tree, leaves and flowers, 3911

Beechey, Frederick William, English Arctic explorer, 4605; portrait, 4597

Beeching, Henry Charles: see Poetry Index

Beech marten, home and food, 792, 789
 Bee-eater, distribution and habits, 3265

pink-crested, in colour, 3144
 Beef, derivation of word, 717

Bee-fly, usefulness, 6089
 Bee-hive, interior arrangement, 5836

what it is, 5493
 Bee-louse, insect, 5719

Bee-orchid, of genus Ophrys, 6496
 what it is like, 5267

flower, in colour, 5394
 Beer, tax explained, 4660

use of barley, 1698
 use of yeast, 1440

Beerbohm, Max, British writer and critic, 8831

Beeroth, view, 3464

Beers, Ethel Lynn: see Poetry Index

Beersheba, view, 3467

Bee's nest: see Carrot, wild

Beethoven, Ludwig von, German composer, 147, 4310

composed when stone-deaf, 560
 during siege of Vienna, 143

portrait, 145
 Beetle, great insect family, 6327

in Carboniferous Age, 1257
 why do we fear a beetle? 1679

Pictures of Beetles

British species, in colour, 6335-6
 diagram, 453

foreign species, 6329: in colour, 6336A
 paddle of whirligig, under microscope, 1911

Beetroot, descended from sea beet, 5782
 member of Spinach family, 2436

Beet-sugar, European crop, 2312
 picture-story, 2288-92

Begbie, Harold: see Poetry Index
 Begbie, Janet: see Poetry Index

Beggars, Dutch patriots' nickname in fight with Spain, 5527

Beggar's Opera, The, scene painted by Lovat Fraser, 2667

Begonia, plant grown from a leaf, 6090
 frilled species, flower, 6382

hairs on stem, 205
 Mrs. Caine species, flower, 6383

Behistun, Babylonian inscription on rock, 6387, 6869

Behrens, Peter, German architect, 6612

Behring, Dr. Emil, German scientist, 2628; portrait, 2623

Beira, port of Portuguese East Africa, 6753

Beirut, capital of the Lebanon Republic, 6270

European quarter, 6271
 Workers in olive grove, 5401

Belemnite, fossil of Jurassic Age, 1508

Belstier, Elliot: see Poetry Index

Belfast, capital of Northern Ireland, 3068

Pictures of Belfast

arms of the city, in colour, 4990
 flag, in colour, 6980

scenes, 3069, 3072-4
 Belfast University, arms, in colour, 4989

Belfort, French iron-founding town, 4170

Belgae, Belgium's ancient inhabitants, 5526

Belgian architecture, Gothic cathedrals, 5991-2

guild halls, 5992, 6371
 pictures, 5996-7, 6367, 6369

Belgian art, modern painters, 3399
 See also Flemish art

Belgian Congo: see Congo, Belgian

Belgium, smallest kingdom of Western Europe, 5530, 5645

Pictures of Belgium

air force insignia, in colour, 6980
 flags, in colour, 6972

peoples and scenes, 5647-60
 railway engine, 3511

Maps of Belgium

general and political, 5534
 historical events, 5535

in colour, 7086
 Belgrade, capital of Yugoslavia, 4556

general view, 4562
 Belin, Edouard, sent writing by wireless, 855

Belinsky, Vissarion, Russian literary critic, 4817

Belisarius, Byzantine general, 5772
 who he was, 4391

Belize, capital of British Honduras, 3556

Bell, Adam, story, 1391

Bell, Alexander Graham, Scottish inventor and scientist, 221, 1842, 3369

Pictures of Graham Bell

experimenting with kite, 1843
 his first telephone, 1841

opening new telephone line, 1843
 portraits, 3359, 4133

with his grandchildren, 1845
 with his wife, 1843

Bell, Andrew, Scottish educationist, 4962
 Bell, Anning, English artist, 2678

Bell, Sir Harold Idris: see Poetry Index
Bell, Henry, Scottish engineer, 3736
 his steamer, the *Comet*, 3735
Bell, how bells are made, with pictures, 2779
 heaviest peal in the world, 5873
 what it is made of, 2780
 what is the Liberty Bell? 6345

Pictures of Bells

Bournville carillon keyboard, 6231
 carillon being played, 2782
 carillon being tested, 2783
 manufacture, 2779-82
 tuning new bell, 2782

See also Electric Bell

Belladonna, relation of tobacco, 2942
 See Deadly Nightshade and Atropine

Bellario, in Merchant of Venice, 6042

Bell bird, ringing cry, 3146

naked-throated, 3137

white-headed, 3147

Bell crank, for jumping motion, 6349

Bellerophon and the Winged Horse, story, 6821

Bellflower, different kinds, 4544, 4781

clustered, in colour, 5394

giant, in colour, 4907

ivy-leaved, in colour, 6127

nettle-leaved, in colour, 4778

spreading, in colour, 4906

Bell heath: see Heather

Bellingshausen, Fabian von, Russian

Antarctic explorer, 6550

Bellingshausen Sea, Dr. Charcot explores, 6558

Belling the Cat, fable, 4246

Bellini, E., wireless compass invented by, 3364

discovered directional wireless, 2093

Bellini, Gentile, Venetian painter, 277

founds school of painting with Giovanni

Bellini, 931

portrait of Doge Mocenigo, 933

portrait of Sultan Mohammed II, 933

Bellini, Giovanni, Venetian painter, 277

first great master of Venetian art, 932

influence on Dürer's work, 1188

teacher of Titian with Gentile, 6678

Pictures by Giovanni Bellini

Doge Loredano, 72

his own portrait, 271

Holy Family, 938

Madonna and Child, 938

Transfiguration, 940

Virgin and Child, 279

Bellini, Jacopo, father of Gentile and

Giovanni Bellini, 277, 931

Bellman, Carl Michael, Swedish poet,

4942

Belloe, Hilaire, British writer and poet,

3829, 4082, 2972

See also Poetry Index

Bellows, why have they a round hole

on one side? 5490

Bells, The, story of Poe's poem, 4203

Bel Merodach, Babylonian god, 6800

Belshazzar, Babylonian prince, Bible

story, 3102

Belt, how to make in poker-work, 5313

how to make in leather, 6924

Belt transmission, 6349

Beluga, or white whale, commercial

value, 2150, 2151

Benalcazar, Sebastian de: see De

Benalcazar

Benares, Holy city of the Hindus on the

Ganges, general view, 2951

Gosain temple, interior, 5084

mosque of Aurangzebe, 2955

Benavente, Jacinto, Spanish dramatist,

5059

Benedick, in Shakespeare's *Much Ado*

About Nothing, 6046

Benedict, St., Roman of a noble family

who became a hermit and later

founded a monastery, 6812

Benedito, Manuel, Spanish painter, 3400

Benelux, association of Belgium, Nether-

lands, and Luxemburg, 5652

Benes, Dr. Eduard, Czechoslovakian

statesman, 4553

Benét, Stephen Vincent, American poet,

4205

Benethasch, star of the Plough, 3726

Benevento, old city of Campania,

Italy, triumphal arch, 5503

Bengal, Indian province, British after

Battle of Plassey, 2946

Bengal florican, bird, 3869

in colour, 3264

Bengali, Indian race, 2072

Benghazi, town of Cyrenaica, 6754

salt evaporation pans, 1541

Benguella, old town of Angola, railway

route across Africa, 6752, 6753

Beni-Hasan, Egyptian tombs, 5379

Benjamin, meeting with Joseph in

Egypt, 992

Rachel's son, 866

called by his brother Joseph, 988

cup found in his sack, 988

Benjamin tree: see *Styrax*

Benkei, theft of bell, story, 6823

Bennett, Enoch Arnold, English novel-

ist, 3713; portrait 3711

Bennett, Henry Holcomb: see Poetry

Index

Bennett, T. P., British architect, Saville

Theatre, London, designed by, 6615

Bennett's eupholus, beetle, in colour,

3636A

Bennett's wallaby, with young, 2393

Ben Nevis, height compared with that

of Everest, 2809

tunnel through, length, 6596

construction of tunnel through, 6224

distast view, 1335

snow-covered cap, 842

Benson, Arthur Christopher, English

writer, 1269, 2972

See also Poetry Index

Benson, Frank, American painter, his

painting, *My Daughter*, 3295

Ben grass, marsh, 3309

Bentley, John Francis, English archi-

tect, designed Westminster cathedral,

4230

Benue River, North Nigeria, Makurdi

Bridge across, 555

Ben Venue, Scottish mountain, 1335

Benzene, its products, 4471

Benzoic acid, 2938

Benzoin, how it is obtained, 2938

plant in colour, 2685

Benzole, plant for extracting spirit from

coal-gas, 3450

Beowulf, story, 1765

Béranger, Pierre Jean de, French lyrical

poet, 4457

See also Poetry Index

Berbera, part of British Somaliland, 3316

Berbers, virile North African race,

settlement in central Spain, 5274

Bergamasco, Venetian architect, work

on the Doge's palace, 6114

Bergen, Norwegian city and port,

ancient fame, 5151

scenes, 5158, 5159

Bergson, Henri, French philosopher,

4458

Bergylt, fish, in colour, 5098

Bering, Vitus, Danish navigator, 776,

4602, 5156

Berkeley, George, Bishop, Irish philo-

sophical writer, 4842, 4837

Berkshire, English county, places in,

7153

road map, 7112

Berlage, H. P., Dutch architect, 6612

Berlin, capital of Germany, 4427

Dürer's portraits belonging to museum,

1193

famous Pergamene frieze, 4403

Napoleon's entry, 1456

junction in sewers, 4384

Berlin, Irving, American composer, 1269

Berlioz, Hector, French composer, 150:

portrait, 145

Bermuda, island group in the North

Atlantic, 3553

arms, in colour, 4985

flag, in colour, 6967

view of Hamilton, 3562

Bernacchi, Louis, explorer, 6552

Bernadotte, Count, assassinated in

Palestine, 6481

Bernadotte, Jean Baptiste, marshal of

Napoleon, 5146

Bernard, St., French monk, 1386

Abelard charged with heresy by, 1387

portrait, 1385

Bernardin de St. Pierre, Jacques, French

novelist, 4456

Berne, capital of Switzerland, 4673

model of prehistoric lake village, in

museum, 4666

Bernhardt, Sarah, portrait by Bastien-

Lepage, 2925

Bernice, sister of King Agrippa, 6540

Bernini, Giovanni, Italian sculptor and

architect, 4554

designs piazza of St. Peter's, 6113

first architect of the Louvre, 6242, 6370

Apollo and Daphne, sculpture, 5013

his sculpture of David, 5007

Bertrand-Bouté, René, his sculpture,

Aviation, 5130

his sculpture, *Thoughts of the Past*, 5131

Beryl, mineral, 1301

Beryllium, an element, 4222

Berzelius, Johan, Swedish chemist, 6312

portrait, 6309

Bessarabia, occupation by Rumania,

4548

taken by Russia, 5772

Bessemmer, Sir Henry, English engineer,

5947

steel-making process, 50, 6606

born at Charlton, Hertfordshire, 4103

portrait, 4102

Bessemmer process, steel converters, 50, 53

Betchworth, near Reigate, Surrey,

scene, 1591

Betelgeuse, diameter of star, 3978

distance from Earth, 2995

size and weight, 3852

Bethany, Jesus's walk with His disciples,

4826

tomb of Lazarus, 3470

view from Olivet, 3466

Bethel, modern site, 3465

Bethlehem, ancient city of Palestine,

the birthplace of Jesus, 3589

Pictures of Bethlehem

Field of the Shepherds, 3464

market-place, 3468

Rachel's tomb, 3465

reputed birthplace of Jesus, 3465

village street, 3468

Bethman-Hollwegg, Count von, Ger-

man Chancellor, 1707

Bethphage, on Mount of Olives, 3470

Bethsaida, view by Sea of Galilee, 3466

Betjeaman, John, English writer and

poet, 4084

Betony, wood, flower, 4778

Betrabay by Judas, painting by Cima-

bue, 572

Bettes, John, English painter, 1928

his portrait of Edmund Butts, 1927

Bettws-y-Coed, Swallow Falls, 1462

Bevan, E. J., part inventor of viscose

process of artificial silk manufacture,

4103

Bevel gears, 6350

Beveridge, Sir William, Social Security

report, 1945

Beverley, town in the East Riding of

Yorkshire, 5871, 5873, 5874

arms, in colour, 4990

Bewick's swan, bird, 3753

Beyrout: see Beirut

Bharal, Tibetan sheep, 1285, 1282

Joseph and his Brethren, 989
The Rise of Moses, 1113
The Great March in the Desert, 1239
Israel Marches Forward, 1363
Samson the Strong Man, 1487
The Story of Ruth and Naomi, 1617
Samuel and the Great Change, 1737
Saul the Wonderful King, 1857
David the Shepherd King, 1985
The Hymns of the World, 2109
A Selection from the Psalms, 2229
The Reign of Solomon, 2355
Elijah and King Ahab, 2481
The Passing of Elijah, 2605
Naaman and the Little Maid, 2727
Jonah and the Storm, 2855
Isaiah the Poet and Prophet, 2977
Daniel and the Kings, 3101
How Esther Saved her People, 3225
Between the Old and the New, 3345

New Testament

The Coming of Jesus, 3589
John the Forerunner, 3717
Jesus in the Wilderness, 3839
Jesus begins His Teaching, 3959
The Teaching of Jesus, 4089
Stories from the Gospels, 4211
Jesus and the Pharisees, 4339
The Approach of the End, 4459
The Betrayal, 4585
The Trial of Jesus, 4701
Calvary and After, 4821
The Sermon on the Mount, 4943
The Traveller into a Far Country, 5061
The Prodigal Son, 5187
Little Talks of Jesus, 5307
Christ's Farewell to His Disciples, 5433
The Birth of Christianity, 5557
Saul of Tarsus, 5679
What Happened to Saul, 5807
The Change that came over Paul, 5925
Paul and Peter Meet, 6053
The Vision of Peter, 6171
What Happened at Antioch, 6297
Paul Saves Christianity, 6417
How Christianity Spread, 6537
The Last Days of Paul, 6663
The Twelve, 6787
The Winning of the World, 6915
Christianity in the World, 7053
Bible general story of the greatest book
in literature, 117, 485, 613
Authorized Version, 6858
British lady mentioned in it, 60
burned by Church authorities, 1517
different versions, 5734
English language influenced, 485
first printed book, 1514
Hebrew literature, 5673, 5677
Jerome's Latin version, 1386
once chained in churches, 120
read aloud in churches, 120
stars and constellations mentioned, 2994
sweetness of its language, 613
translated into Bengali, 1138
translated into Chinese, 1138
translated into English, 120, 7054
translated into German, 7055
Tyndale's translation, 485

Wonder Questions

how many words in the Bible? 5251
what is the Breeches Bible? 5734
what is the Revised Version? 6858

Pictures of the Bible

chained Bible being read, 3757, 7051
chained in Hereford Cathedral, 485
illuminated pages from early copies, 492
places in the Holy Land, 3463-70
reading the Bible in Tudor times, 1083
Tyndale translating, 119
Wycliffe sending out preachers, 119

See also names of places and people
Bi-carbonate of soda: see Sodium
bi-carbonate

Biceps, how they lift the arms, 1811
Bickerstaff, Isaac, Richard Steele's nom
de plume, 1732

Bicknell, Maria, Constable's wife, 5694
Bi-concave, meaning of term, 842
Bicycle, invention of tyres, 1166
how to clean one, 254

why does a bicycle keep upright? 6346
Bida, Alexandre, his painting, Naomi
driven into exile, 1619
Biddenden Maids, legend, 1149

Biddy and the Candle, story, 6321
Bideford, port of north Devon, lovely
old bridge, 6240
Biel, Lake, Switzerland, 4466
Biel's comet, its career, 3607
Biells, meteors of Biela's comet, 3608
Biennial hawk's-beard, in colour, 5393
Biffen, Professor, wheat studied and
improved by, 1576, 1578, 5578
Big Ben, Parliament's clock, 6832
behind the face, 6833
hour hand, face, and pendulum, 6831
Biggest Thing, what is the biggest thing
in the Universe? 6970
Big Jar of Water, story, 5707
Biglow Papers, Lowell's poems, 4332
Bignonia, seed has parachute, 948
Bilateral symmetry, what the term
means, 1566
Bilbao, Spanish port on the Bay of
Biscay, 5278
corner of the town, 5285
steel works, 5273
Bilberry, or blueberry, member of genus
Vaccinium, 6493
what it is like, 5517
wild fruit, in colour, 3670
Bile, in digestion, 2064
Bill, in Parliamentary procedure, 4587,
4774
Billingsgate Market, London, fish in-
dustry, 5730
Billion, what is a billion? 5493
Billycock, why is a hat called a Billy-
cock? 6232
Binary star, double star, 3852
Binding of the Monster, story, 1274
Bindweed, damage it does, 3177
species found in cornfields, 4544, 4662
Bingen, German Rhine town, 4422
Biturong civet, animal, 424
Binyon, Laurence, English poet, 4081,
See also Poetry Index
Biologist, student of science of life, 5569
Biplane, double-decked aeroplane, 4578
Birch, S. J. Lamorna, English artist, 2677
Birch, beautiful tree, 3787
with leaves and flowers, 3910
Bird, life-story, 2635
archaeopteryx the first, 44, 646, 1508,
2636
babbling family, 3145
balancing, how to make, 1743
beak and breastbone, uses, 2638
bunting family, 2902
colouring due to blood cells, 1981
crane family, 3874
crop protector from insect pests, 2640
crow family, 2763
cuckoo family, 3375
dove family, 4119
duck family, 3747
edible nests of swifts, 3260
eggs and their hatching, 2640
finch family, 2896
first true bird appears, 11, 1505, 1508
flight abandoned by some species, 2642
food of, 2640
fossils of extinct birds, 2636
goose family, 3747
heron family, 3869
hornbill family, 3265
how to feed birds, 625
humming-bird family, 3259
instinct in, 5123
lark family, 3015
little bird that turns round, toy, how to
make, with picture, 2113
migration, 2642
moulting, 2638
museum for bird lovers, 2612
non-flying birds, 4367
owl family, 3502
parrot family, 3497
pecker family, 3253
pheasants and their allies, 4247
pigeon family, 4119
pigeons, how to keep, 6926
prehistoric, 646
preying birds, 3625
reptilian origin, 454, 2635
scatterers of seeds, 948
sea birds and their inland kin, 8995
semi-circular canals in brain, 3407
sight very strong, 6468
song-birds breathe vigorously, 1322
species that perch, 2763

speed of flight of many birds, 6852
starling family, 2891
stork family, 3872
teeth no longer possessed by, 454
temperature, higher than that of a
mammal, 44, 328, 2638
warbler family, 3137
web-footed birds, 3747
wing's origin, 2636
world-wide distribution, 2642

Wonder Questions

are birds the farmer's friends? 6855
do birds always sing the same song? 2042
how can a bird fly though it is heavier
than air? 6854
how does a bird know how to build its
nest? 5123
how long do birds live? 6229
what does a bird sing about? 561
what wakes them up? 64
why can we not fly like the birds? 6597
why do birds not fall to the ground?
4891
why do some birds fly so high? 6468
why do they cast their feathers? 6232
why have the eggs so many colours?
4268
why must we cut the claws of caged
birds? 1305

Pictures of Birds

brain compared with man's, 2931
evolution, 79
map, showing migrations, 222
most beautiful in the world, series in
colour, 3141, 3261
sense of direction, 617
species that nest in Britain, series in
colour, 2765, 2897, 3021
See also under separate names
Bird, Robert : see Poetry Index
Bird, Thomas, erected first cross and ball
on St. Paul's, 5617
Bird cherry, what it is like, 4039
flower, in colour, 4908
wild fruit, in colour, 3672
Bird-eating spider, in search of prey,
5593
Bird-lice, book-louse's relations, 5718
Bird of Paradise, characteristics, 2771
great bird of Paradise, in colour, 3142
Hunstein's bird of Paradise, in colour,
3264
king bird of Paradise, in colour, 3264
red bird of Paradise, 2772
Bird pepper : see Cayenne pepper
Birds and the Mice, story, 5094
Birds-eye : see Germander speedwell
Bird's-eye primrose, what it is like, 5518
flower, 5891
Bird's foot, common, member of Pea
family, 5020
flower, in colour, 5142
Bird's-foot starfish, 6697
Bird's-foot trefoil, member of genus
Lotus, 6492
flower, in colour, 4420
Bird's nest, plant : see Carrot, wild
Bird's nest orchid, member of genus
Neottia, 6496
what it is like, 4780
Bird with the Golden Wings, story, 1396
Birkeland-Eyde, arc process, nitrates
made from the air, 856
Birkenhead, Wreck of the, story, 5342
Birmingham, a manufacturing centre in
Stuart times, 1214
canal system, 4867
pin industry's centre, 6463
water supply, 4506
arms, in colour, 4990
early steam carriage, 1580
University arms, in colour, 4989
water reservoirs in Wales, 1459, 4506
Birr Castle, Parsonstown, Ireland, Lord
Rosse's telescope, 4861
Birrell, Augustine, essayist, 2970, 4481
Birth certificate, what it is, 8253
Birthright, what does it mean? 5862
Biscoe, John, English explorer in the
Antarctic, 8549
Biscornette, the craftsman who wrought
the iron doors of Notre Dame, 6740
Biscuit, how to make, with picture, 1492
Biscuit-china, how it is baked, 302
Bishop, Sir Henry, English composer,
1265

Bishop Hatto, poem and picture, 4181
Bishop's mitre, insect, in colour, 5714
Bishop's mitre, shell, 1179
Biskra, Algerian resort on the fringe of the Sahara, Arab girls, 6746
boy musicians, 6746
 general view, 6764
 hotel de ville, 6761
Moslem boys' school, 6745
native boy, 6746
 natives gathering dates, 1939
 typical street, 6761
 village mosque, 6761
Bismarck, Prince Otto von, Prussian statesman, 4298
 French overthrow planned, 4048
 his idea of war and a German Empire, 2478
 portraits by Lenbach, 3399
 provokes war with France, 4624
 Napoleon III of France surrenders to, 4301
Bismuth, mineral, 1304
Bison, America's only wild cattle, 1155
 formerly ran wild in Europe, 1152
 American, 1157
 cave man's drawing, 193
 European, 1157
 herd in Canada, 1151
Bite, how to treat insect bites, 6178
Bitling stonecrop, what it is like, 5268
 flower, 5267
Bittercress, member of genus *Cardamine*, 6491
 flower of large-flowered species, in colour, 6130
Bitterling, eggs hatched in mussels, 4857
Bittern, bird's habits, 3871
 in colour, 2897
 sun bittern, in colour, 3144
 with wings outstretched, 2641
Bittersweet: see *Woody nightshade*
Bitter vetch, of genus *Lathyrus*, 6492
 what it is like, 4782
 flower, in colour, 4906
 spring species, seeds spring out, 946
 tuberous species, flower, in colour, 4908
Bitterwood tree, produces quassia, 2689
 where it grows, 2684
Biwa, Lake, Japan's largest lake, 6622
Bizet, Alexander César Léopold, French composer, 150; portrait, 145
Björnson, Björnsterne, Norwegian poet and dramatist, 4941; portrait, 4937
Black, Dr. Joseph, Scottish chemist, 20, 2748
Black and Tan Campaign, Irish civil disturbances, 3066
Black and yellow broadbill, bird, in colour, 3143
Black and yellow macaw, bird, 3499
Black ant, slave-making ants, 5967
 pupae of, 5965
Black ape, 161
Black arches moth, and caterpillar, in colour, facing 5935
Black-backed jackal, 536
Black-backed piping crow, 3017
Black bear, American and Asian, 791
 pictures, 785, 787
Black bearberry, what it is like, 5518
Blackberry, member of *Rose* family, 4284
 new fruit produced from, 1202, 1204
 flower, in colour, 4286
 white, 1203
 wild fruit, in colour, 3671
Blackbird, habits and song, 3026
 feeding habits, 6855
 in colour, 2898
Black-bodied poplar beetle, in colour, 6335
Black bryony, berries poisonous, 4289
 related to yam, 2442, 4289
 flower, 4290
 wild fruit, in colour, 3670
Blackburnian warbler, bird, in colour, 3143
Blackcap, bird, characteristics, 3138
 in colour, 2767
 route of migration, 223
Black-capped lory, bird, in colour, 3142
Blackcap titmouse, bird, in colour, 3263
Blackcock, and capercaillie, birds, 4248
 in colour, 3021
Black cormorant, bird, 3749
Black-crested eagle, bird, 3636

Black-currant, wild, member of *Saxifraga* family, 4782
 flower, 4778
 fruit, in colour, 3667
Black Death (1348 to 1351), Oriental plague which devastated Asia and Europe, began in China, 3757
 effect on art and literature, 1924
 England swept by, 954, 1348, 3637
 number of people killed, 3757, 6468
Blackett, Professor Patrick, British scientist, Cosmic rays from Milky Way theory, 6318
Blackface sheep, with lamb, 1280
Blackfish, habits and food of, 2152
Black-footed penguin, bird, group, 4001
Black Forest, Germany, 4545
 German peasant industries, 4426
 scenes, 4431
Blackfriars Bridge, London, why so named, 1387
 picture, 1221
Black grouse, bird, in colour, 2765
Black guillemot, bird, in colour, 2765
Black hairstreak butterfly, with egg, caterpillar, chrysalis, in colour, 6207
Blackhawk, Indian chief, statue at Oregon, 3688
Black-headed grosbeak, bird, in colour, 3264
Black-headed gull, bird, in colour, 2765
 group alighting, 3995
 guarding its eggs, 3997
Black horehound, what it is like, 5023
 flower, in colour, 5144
Black hornbill, bird, 3255
Blackie, John Stuart: see *Poetry Index*
 family, 4414
 member of genus *Centaurea*, 6493
 flower, in colour, 4420
Black-lored red tanager, bird, in colour, 3261
Black maidenhair spleenwort, fern, in colour, 1798
Black maple, sugar yielded by, 2372
Black medick: see *Trefoil*
Blackmore, Richard Doddridge, English novelist, 3712
Black moss: see *Spanish moss*
Black mustard, 2802
Black-necked grebe, bird, in colour, 3021
Blackness, what it is, 1920, 2920
Black nightshade, many varieties and names, 5023
 member of genus *Solanum*, 6493
 used as medicine, 5265
 flower, in colour, 5394
 wild fruit, in colour, 3671
Black obelisk, panel from, 3899
Black pepper, plant, in colour, 2686
Blackpool, Lancashire, its tower, 350
Black poplar, height and use of, 3788
Black Prince, Edward the, English soldier, 952, 954
 Froissart on chivalry and cruelty of, 3506
 invested with Order of Garter, 3507
Black rat, 1033
Black restart, bird of Europe, 3017
Black Rod, officer of the House of Lords, why does he knock three times? 5490
Black Sea, inland sea of south-east Europe, waterspout, 2619
Black sea-bream, fish, in colour, 5100
Black slug, 6577
Black solanum: see *Black nightshade*
Black swan, on its nest, 3753
Black-tailed godwit, bird, 3875
Blackthorn, of genus *Prunus*, 6492
 why is it so called? 4039
 wild fruit, in colour, 3672
 with flowers and leaves, 4153
Black-throated diver, bird, 4003
 in colour, 2000
Black-throated tree partridge, 4251
Black-veined white butterfly, 4040
 with egg, caterpillar, and chrysalis, in colour, 6207
Black vulture, 3633
Black wallaby, kangaroo, in native haunts, 2394
Blackwall Tunnel, built by Lord Cowdray, 4107
 See also *Tunnel*
Black-water beetle, in colour, 6336
Black-winged grackle, bird, 2893

Blackwood, Captain, and Nelson's last signal, 5349
Bladder campion, flower, night-flying moth attracted by, 4543
 in colour, 4661
Bladder fern, species, 1797, 1800
Bladder frog, amphibian, 4741
Bladderlocks, edible, seaweed, 3413
Bladderwort, insects for food, 204
 leaves absorb water, 457
 what it is like and how it multiplies, 1068
Bladder wrack seaweed, life-story, 703
 twin species, 3416
Blaberry: see *Bilberry*
Blake, Robert, English sailor, 528, 1210
 beat Van Tromp at sea, 523
 portrait, 521
Blake, William, English mystic poet and engraver, 3954
 See also *Poetry Index*
Blanche, queen of France, regent for her son Louis IX, 2252
 in Shakespeare's *King John*, 6289
Blanket-stitch, how to make, with picture, 2360
Blank verse, 240
Blantyre, commercial capital of Nyasaland, 3314
Blashfield, Edwin H., American decorative painter, 3287, 3288
 The Power of the Law, painting, 3296
Blatella, insect, in colour, 5713
Blaxland, Gregory, Australian explorer who first found a way through the Blue Mountains, 6063
Blak, fish, scales used to make imitation pearls, 4979
 picture, in colour, facing 5197
Black House, by Charles Dickens, 2848
Bleeding, how to stop it, 1196, 1197
Blencathara, the shepherd and his story, 465
Blenheim, battle of, English troops going into action, 1329
Blenheim Palace, Oxfordshire, designed by Sir John Vanbrugh, 6469, 6252
Blenny, fish, eggs, 5102; young, 4858
 species, in colour, 5098
Blériot, Louis, French airman, 21
 Blewit, edible fungus, 3411
Blickling Hall, architecture, 6237
Blind, musicians who were blind, 144
 why are blind people so quick at hearing? 2666
 why are some people colour blind? 6844
Blind Fiddler, The, Wilkie's picture in National Gallery, 2545
Blind man's buff, game, 4468
Blind man's stab, game, 1746
Blind partners, game, 1746
Blind-worm: see *Slow-worm*
Blinkers, why does a horse wear? 3652
Blister, how to treat cold blisters, 6178
Blister beetle, in colour, 6335
Bloche, Roger, French sculptor, 4648
Block system, in signalling, 4193
Bloemfontein, capital of Orange Free State, South Africa, 3188
 Post Office, 3194
Blois, Chateau de, France, one of the world's most famous palaces, 6358
 Pictures of the Chateau
 entrance to the Chateau de Blois, 6368
 Louis XII wing, 6364
 room in, 6365
 staircase, 6368
Blomfield, Sir Reginald, British architect, 6610
Blommers, B. J., Dutch artist, Knitting Girl, painting by, 3660
Blondat, Max, Love Triumphant, sculpture, 5259
Blondel, wandering minstrel, story, 1647
Blondin, Charles, crosses Niagara on tight-rope, 3406, 3407
Blood, story of the blood and its circulation, 1195
 breathing of the blood, 1063
 cells; see *Blood cells*
 circulation discovered, 1195, 2506
 circulation explained, 1198, 2800
 circulation period in animals, 7068
 coagulated in gas poisoning, 3336
 colour due to red blood cells, 941
 colouring of birds and butterflies due to blood cells, 1981

colour varies, and why, 944
 fish have cold blood, 326, 452
 fluid part and its work, 1063
 food absorbed into blood by special cells
 in walls of bowel, 2084
 gases of blood explained, 1062
 how it keeps the body equally warm,
 5128
 milk makes the best blood, 2309
 muscles richly supplied with, 1800
 pressure: see Blood-pressure
 specific gravity kept constant by the
 body, 4954
 temperature higher in birds than in
 beasts, 44, 328, 2638
 weight proportion in various animals,
 7068
 cannot we bleed unless a hole is made in
 our veins? 5368
 is our blood cold when we feel cold?
 5492

Pictures of the Blood
 capillaries of the blood, 941
 circulation diagram, 1197
 germs resisted by white cells, 1061
 how it goes to brain, 1195
 under microscope, 943
 See also Bleeding; Blood cells;
 Blood-plates; Blood-pressure
Blood cells, red, their work, 941
 discovered in frogs by Jan Swammer-
 dam, 1884
 marrow of our bones always making new
 blood cells, 942, 1567
Blood cells, white, description, 1059
 alcohol stops their work, 1062
 dirt carried away by, 829, 1059
 Metchnikoff discovered that they pro-
 tect us from disease, 2626

Pictures of Blood Cells
 dying red cells grouping together, 943
 red and white cells, 943, 1059
 red cells floating in plasma, 943
 white cells and germs, 1059
Bloodhound, characteristics, 670, 665
**Blood-plates, in early stages of clotting,
 1062**
**Blood-pressure, pituitary gland controls,
 3175**
Bloody cranesbill, bird, in colour, 5643
**Blore, James, British architect, work on
 Buckingham Palace, 6472**
Blotter, how to make, and picture, 2115
Blotting-paper, why it absorbs ink, 560
 why it absorbs water, 107
Blount, Martha, Pope's friend, 1612
Blow-fly: see Bluebottle
**Blücher, Marshal, Prussian commander
 at Waterloo, 1458, 4048, 4297**
**Blue and yellow hare beetle, in colour,
 6336A**
**Blue and yellow macaw, bird, in colour,
 3142**
**Blue bear, American and Asian species
 distinct, 792**
Bluebell, what it is like, 4780
 wild, in colour, 4905
Bluebell of Scotland: see Harebell
Blueberry: see Bilberry
Blue bird, in colour, 3141
 Indian fairy, species, in colour, 3262
Blue blood, do any people have it? 2300
Blue Book, what it is, 5864
Blue-bottle: see Cornflower
Bluebottle fly, habits of, 6086, 6082
 grub and pupa, 6087
 tongue, through microscope, 1915
**Blue Boy, The, Gainsborough's famous
 picture, 2052; in colour, 2180**
Blue cap, edible fungus, 3411
**Bluecoat School, founded by Edward VI,
 1081**
 what are the Bluecoat boys? 6844
Blue-creeper, bird, in colour, 3141
Blue-crowned motmot, in colour, 3261
**Blue Ensign, what it is and when used,
 6962; in colour, 6965**
Blue-faced barbet, bird, in colour, 3144
**Blue fleabane, member of genus Eri-
 geron, 5760, 6493**
 flower, 5759
Blue grosbeak, bird, in colour, 3264
**Blue-headed wagtail, bird, in colour,
 2897**
**Blue-headed warbler, bird, in colour,
 3263**

Blue Jackal, The, story, 5218
Blue Jay, story, 6953
**Blue marsh vetchling, member of Pea
 family, 5890**
 flower, in colour, 6127
Blue Moon, what it is, 3168
**Blue Mountains, Australia, Blaxland
 penetrates them, 6063**
Blue Mountains, Jamaica, 3554
Blue-necked cassowary, bird, 4369
Blue owl pigeon, bird, 4118
Blue pimperl, what it is like, 4543
 flower, in colour, 4663
Blue-rock pigeon, bird, 4123
Blue shark, man-eating, 5228, 5227
 picture, in colour, 5100
Blue stocking, what does it mean? 5982
Blue tanager, bird, 2893
Bluetthroat, bird, migration of, 3026
Blue tit, bird, habits of, 3020
 in colour, 2765
Blue wren, bird, in colour, 3143
**Blunden, Edmund Charles, English poet,
 4083**
Blunt, Wilfrid Scawen, British poet, 4081
 See also Poetry Index
Blunt-leaved bog moss, 3408
**Blushing, brain's message to arteries
 causes, 1199, 3175**
 what happens when we blush? 5738
Blushing bride rose, 6381
Boa constrictor, snake, 4617, 4618
**Boadicea, ancient British queen, 890,
 889**
 her rebellion and defeat by the Romans,
 212
 Westminster sculpture by Thomas
 Thornycroft, 590, 891
Boar, wild, characteristics of, 1654
 London craftsmen chased by one, in 11th
 century, 3030
 preserved by English kings, 1654
 tusks, 1658
 European, 1657
 on the march, 1657
 primitive drawing of, 192
**Boar, Ernest, British artist. Cabots
 leaving Bristol, painting, 1021**
Board of Trade, flag, in colour, 6966
Boarfish, in colour, 5099
Boarhound, 668
Boar's Head tavern, sign, 4862
Boastful Italian, The, fable, 3624
Boastful Traveller, The, fable, 4246
Boat, centre of gravity of, 5075
 how to make toy boats, with pictures,
 5932, 6927
 how to make a power-driven boat, with
 pictures, 4592
 how to row and sail, with pictures, 6055
 manufacture of rowing boat, 4264
Boatbill, bird, 3868
**Boats of Concarneau, painting by Henry
 Barnoin, 3774**
Boaz, husband of Ruth, 1620
 meeting Ruth in cornfield, 1620
Bobac, marmot that carries plague, 1031
**Bobbies, origin of nickname for police-
 men, 2137**
Bobbins, cotton wound on to, 176
Bobolink, bird, food and nest of, 2395
 in colour, 3143
**Boccaccio Giovanni, Italian novelist and
 poet, 4583; portrait, 4581**
Boccati, Giovanni, Italian painter, 825
Bocklin, Arnold, Swiss painter, 3398
Bodiam Castle, Sussex, 964
Bodmin Moor, description, 210
Bodruga's Leap, story, 1524
Body: see Human Body
**Boehm, Sir Edgar Joseph, British sculp-
 tor, 4767**
**Boer War, ended in formation of Union
 of South Africa, 1588, 3188**
**Boethus, Greek sculptor of the third
 century B.C., 4403**
 Boy and Goose, sculpture by, 4399
Bog asphodel, of Lily family, 5888
 flower, 5891
Bog-bean: see Buck-bean
**Boghaz-Keul, excavated by Dr. Winck-
 ler, 6871**
Bogland, scene in Scotland, 5887
**Bogland flowers, 5887, 6127, 5889, 5891,
 in colour, 6127-30**
Bog-moss, uses of, 458, 1439
 blunt-leaved species, 3408

Bog myrtle, flower, 5891
Bognor, Sussex, view on sands, 1594
Bogota, capital of Colombia, 7021, 7011
Bog pimperl, 5889; flower, 5891
**Bog whortleberry, member of genus
 Vaccinium, 6493**
 wild fruit, in colour, 3665
Bohea, variety of tea, 2314
**Bohemia, ancient kingdom included in
 Czechoslovakia, 1710, 4554**
**Böhme, Jacob, German mystic author,
 4698**
Bohr, Niels, Danish scientist, 6317
**Boiardo, Count Matteo, Italian poet,
 4583**
**Boileau-Despréaux, Nicholas, French
 poet, 1609**
Boiler, development, 3212
 tubular in Stephenson's Rocket, 3214
 water-tube boiler, 3212
 of railway engine, 3947
**Boiling, can anything boil when it is
 cold? 4998**
**Boiling point, varies with atmospheric
 pressure, 5367**
Bojer, Johan, Norwegian novelist, 4941
Boker, George H.: see Poetry Index
**Bol, Ferdinand, Dutch artist, Scholar
 Meditating, painting by, 3659**
**Boldrewood, Rolf, Australian writer,
 4336**
Boleslas, king of Poland, 5026
Boletus, edible fungus, 3411
**Boleyn, Anne, second wife of Henry VIII,
 1076**
 portraits, 1077, 4133
Bolitto, Hector, British writer, 4335
**Bollivar, Simon, Venezuelan general and
 patriot, 898, 7004**
 portrait, 889
Bolivia, South American Republic, 7019
 war with Paraguay in the Chaco, 7004
 flags, in colour, 6972
 scenes, 7012
 maps, 7023-29; in colour, 7104
Boll weevil, enemy of cotton, 1438
Boloco Gorge, New South Wales, 2580
**Bologna, Giovanni, Italian sculptor,
 4534**
 sculptures by him, 4525, 4530
 sculptures on fountain in Florence, 4722
**Bologna, Italy, church of San Petronio,
 5991**
 Della Quercia's reliefs in church of San
 Petronio, 4524
 Italian art centre in 16th century, 936
Bolshevik, meaning of word, 6353
 invasion of Poland, 5029
 rise in Russia, 5899
**Bolton, Lancashire, Crompton makes
 his mule, 5941**
Bolton Castle, Yorkshire, 963
Boma, port of Belgian Congo, 6749
**Bombardier beetle, fluid ejected as de-
 fence, 6330**
**Bombay, city and port of India, famous
 buildings in city, 2820,**
 Portugal cedes to Charles II, 2076, 2945
 port, 2810
 street scene, 2950
**Bona, Algerian cathedral city and port,
 general view, 6760**
**Bonaparte, Jerome, Napoleon makes him
 king of Westphalia, 1456**
**Bonaparte, Joseph, Napoleon makes him
 king of Southern Italy, and afterwards
 king of Spain, 1456**
**Bonaparte, Louis, Napoleon makes him
 king of Holland, 1456, 5530**
**Bonaparte, Napoleon, French emperor:
 see Napoleon I**
Bonar, Dr. Horatius: see Poetry Index
Bone, Muirhead, Scottish etcher, 2678
Bone, general description, 1691
 building seen under microscope, 1567
 thymus gland's function, 3174
 why have we bones in our bodies? 5004

Pictures of the Bones
 arm, diagram showing bones, 1694
 blood-cells in adult bone, 1565
 elbow-joint, diagram, 1693
 foot, diagram, 1695
 hand, diagram, 1695
 hip-joint, ball-and-socket plan, 1692
 leg diagram, 1694

middle and third fingers, 1567
 primitive drawings on bones, 195
 skull, diagram, 1692
Bonifis, Adda, Sympathy, sculpture by, 5255
Bonfire, why it is so named, 5128
Bongo, antelope, related to eland; horned in both sexes, 1399
Bonheur, Rosa, French painter, 2790
 Shepherd of Pyrenees, painting, 3657
 Wagon and Horses, painting, 3656
Boniface, St., early English missionary, 1386, 1907
 legend of spring, 5958
Bonington, Richard, British water-colour painter, 2425
 Fishing Boats, painting, 2422
 River Scene, painting, 2425
 The Antiquary, painting, 2421
Bonito, fish, in colour, 5098
Bonn, German Rhine town, 4422
 Beethoven's birthplace, 148
Bonnard, Pierre, French artist, 3042
Bonnie Prince Charlie: see Young Pretender
Book, picture-story of bookbinding, 3385
 before the days of printing, 1511
 Bible in Latin the first printed book (1455), 1514
 how books should be read, 111
 how to cover a book with paper, 1625
 on the shelves, puzzle and picture, 5814, 5993
 trick you can play with a book, 2982
 why do we gild the top of a book? 5619
 for swearing coronation oath, 4864
 page of first printed English book, 4859
 pages from old illuminated books, in colour, 489-492
 pictures of book-binding, 3385-90
Book, The, picture by Henri Morisset, 7218
Book-end, how to make, with pictures, 2237
Book-louse, insect, 5716
 picture, 5719
Book of Kells, illuminated manuscript that is one of our greatest treasures, 450, 1923
 buried for years to escape destruction by Norsemen, 3065
 page from it, 3063
Book of the Dead, Ancient Egyptians used to place in tombs, 316, 6875, 6877
 Egyptians believed that death did not end life, 5674
 page, in colour, 318
 portion of one, 5673
Bookshelf, how to make, with pictures, 2237
Boomerang, described, 2915
 how to make, with picture, 1249
 Aborigine showing one to Dampier, 2084
 native throwing one, 2915
Boot, Jesse (Lord Trent), a creator of industry, 4110
Booth, General William, English religious leader, founder of Salvation Army, 5452
 portrait, 5459
 portrait, with mother, 4133
Boothby-Pagnell, Lincolnshire, manor house, 719
Borage, of genus Borago, 5023, 6493
 members of family, 4416, 4543, 5518
 stream members of family, 6011
 woodland members of family, 4781
 flower, in colour, 5143
Borchgrevink, Carsten, Norwegian Antarctic explorer, 6551
 portrait, 6549
Bordeaux, French city, 4172
 Saint Andre cathedral, 4176
Border carnation, flower, 6382
Boreas, mythological name for north wind, 3519
Borecole: see Curly kale
Borghese Mars, statue in Louvre, 4899
Borghese Warrior, statue by Agasias, in the Louvre, 4403, 4275
Borgognone, Ambrogio, Italian painter, 935
 architectural work, 6110
 Marriage of two St. Catherines, 933
Boris III, king of Bulgaria, 5774
Boris Godunov, Pushkin's play, 4817

Börjeson, John, sculpture by, 5254
Borneo, British North, description, 3425
 arms, in colour, 4985
 Dyak dancing women, 3434
 flags, in colour, 6967
 map of natural and industrial life, 5540-1
 map, in colour, 7097
Borneo, Dutch, map, in colour, 7097
Bornholm, Danish island, 5149
Boro Budur, Java temple, 6995, 6993
Boron, element, 4222, 4814
Borough, what it is, 4411
Borrow, George, English traveller and romance writer, lived at Oulton Broad, 212, 8828; portrait, 3827
Bors, Sir, knight of King Arthur's court, 6943
Borth-y-gest, Cardiganshire, 346
Borzoi, Russian dog that is a match for a wolf, 669, 666
Bosboom, Johan, Dutch architectural and landscape painter; painted fine church interiors, 3400
Bosch, Jerome, Flemish painter, 1058
Bose, Sir Jagadis C., proved that tree answers back to passing cloud, 82
Bosham, Hampshire, scene, 1591
Bosnia, country now included in Yugoslavia, 4555
Bosphorus, strait connecting the Black Sea and the Sea of Marmora, a palace on its shores, 6143
Bossion Glacier, Mont Blanc, 2132
Bossuet, Jacques Bénigne, bishop of Meaux, French historian and theological writer, believed in church and king, 4455
Boston, port of Lincolnshire, St. Botolph's church, 1836
Boston, capital of Massachusetts, U.S.A.
 La Farge's mural paintings in Trinity church, 3287
 Old Meeting-House, 3804
Boston Tea Party, protest of Boston, U.S.A., citizens against taxation, 3793
 painting in Boston State House, 3797
 throwing tea chests overboard, 1333
Boswell, James, Scottish author, 1976, 1978
Bosworth Field, battle that ended Wars of the Roses, 960
Botany, game for a picnic, 6544
 picture-dictionary, 6494-95
Botany Bay, discovered by Captain Cook, 2381
Bot-fly, plague to horses, 6088, 6082
Botha, Louis, General, credit due to him for South African peace, 3188
Bo tree, ancient tree at Anuradhapura, Ceylon, 3052
Botryllidae, sea-squirts, 5346
Botta, Paul, French consul who unearthed great palace of Sargon at Khorsabad, 6869
Botticelli, Sandro, Florentine painter, 6678; portrait, 6673
 visited in his studio, 6675

Pictures by Botticelli

Madonna and Child, 567
 Spring, 569
 Virgin and Child, 3657
 Virgin with Christ, 571
Bottle, how to clean a bottle, 256
 how to make a bottle blow out a candle, 1123
 how to make a musical instrument from one, 251
 lifting a bottle with a straw, trick, 5564
 trick with mysterious bottle, 754
 how glass bottles are made, 3881-3883
 musical instrument made from, 251
Bottle tree, Australia, 3057
Bottom, in Shakespeare's Midsummer Night's Dream, 6294
Bottomley, Gordon, English writer and poet, 4082
Boch, Sir Thomas, English railway engineer, 548
Bouchardon, Edmé, French sculptor, 4646
Boucher, Alfred, his sculpture, In the Fields, 4898
Boucher, François, French painter, pictures, tainted with vulgarity, 1689

Pastoral Idyll, painting, 1683
Bougainville, Louis Antoine de, French navigator, rediscovered Solomon and Marquesas Islands, 2377
Bougainvillea hydrozoon, under microscope, 1915
Boughton, George H., British artist, his paintings, Milton meets Marvell, 1355
 Pilgrim Fathers awaiting Food, 3790
Bouguereau, William, his paintings, Calvary, 4823
 David the Shepherd, 1984
 The Consoler, 3533
 Virgin and Child, 3656
Bouillon, Godefroy de, Crusades leader, monument in Brussels, 5649
Boule, André Charles, French craftsman who worked for Louis XIV, 6737
Boulogne, French port, 4170
 Napoleon assembles army, 1455, 4048
 Roman road to Cologne, 5645
Boulton, Matthew, engineer, 2748
 Watt showing model engine to him, 2749
Boulton Paul Defiant, aeroplane, 4689
Bounce about, game, 3476
Bounty, mutineers from ship settle on Pitcairn Island, 3428
 telescope, 4861
Bouraine, Marcel, French sculptor, 4648
Bourbon, Louise Adelaide de, portrait by Mme. Le Brun, 3536
Bourbons, The, French dynasty, 650
Bourdelle, Emil Antoine, sculptor, 4896
Bourdillon, Francis William: see Poetrv Index
Bourges, fine old city of central France. architecture of cathedral, 5989
 town hall, 6359
 house of Jacques Coeur, 6362
Bournville, carillon, with picture, 6231
Bourseul, Charles, telephone investigations, 1841, 1844
Boutet de Monvel, French painter, his picture, Trial of Joan of Arc, 2256
Boutigny, Emile, French Revolution, picture by, 4045
Bouts, Thierry, or Dierick, Dutch painter, imitated by German painters, 1188
 pictures lack graciousness, 1056
 portrait of a man, by, 1055
Bouvines, battle of, painting by Horace Vernet, 1803
Bow, London, beautiful china once made at, 6737
Bow, how to make a bow from an elastic band, and picture, 4096
Bowel, the important work done by the bowel, 2062
Bower, Professor F. O., book: Botany of the Living Plant, 460
 on conditions for photo-synthesis, 460
 on a Mexican plant in Ceylon, 1066
 on plant cells, 579
 on sensitive plant, 586
Bower bird, characteristics, 2774
 in its bower, 2773
 regent, in colour, 3144
Bowers, Lieutenant H. R., Antarctic companion of Scott, 6559, 6560
Bowles, Miss, portrait by Sir Joshua Reynolds, 72
Bowls, game, how to play, 4590
 what makes a bowl swerve? 5615
 Drake playing on Plymouth Hoe, 4590
 how woods are made, 4264, 5612
Bowring, Sir John, English linguist, political economist, hymn writer, 1758
 portrait, 1759
Box, how to make a paper box, with picture, 3845
Boxer Rising, in China, 6504
Box Hill, view near, 1589
Boy, why does a boy's voice break? 1794
Boy and the Ambassador, story, 6690
Boy and the Angel, picture to poem, 225
Boy Fiddler of Sicily, story with picture, 287
Boyle, Robert, Irish chemist and electrical pioneer, 234, 5323
 law about compression of gases, 5201
 portrait, 5323
Boyle, Sarah: see Poetry Index
Boyle Abbey, Roscommon, Ireland, 3060
Boyne, Irish river, 1214
Boys and the frogs, fable, 3866
Boy Scout movement, 3587

cheering at mass meeting, 3585
 Boys eating Melons, Murillo's painting at Munich, 1312
 Boy Who Broke the Wings of the Wind, story, 1273
 Boy Who Climbed the Fortress, story and picture, 2285
 Boy Who Cried Wolf, fable, 3866
 Boy Who Fled from Rome, story, 6812
 Boy Who Found Light, story, 5707
 Boy who Had no Paper, story, 5707
 Boy who Kept back an Army, story, 6951
 Boy who Might not go West, story, 782
 Boy who saved a Crew, story, 6081
 Boy who Saved his Family, story, 6196
 Boy who Saved the Hamlet, story, 5581
 Boy who Served his Tribe, story, 5828
 Boy who Slept Well of Nights, story, 6685
 Boy who Wrote to the Pope, story, 5468
 Brabant, ancient province of the Netherlands, 5652
 Bracken, Thomas : see Poetry Index
 Bracken, fern, enemy of farmer, 1439
 in colour, 1800
 Bradford, Yorkshire, 214
 arms, in colour, 4990
 dam, 4504
 technical college, 1832
 Bradford-on-Avon, Saxon church, 5885, 725
 Bradley, James, English astronomer, 3614; portrait, 3611
 Bradley, R., kaleidoscope inventor, 6730
 Bradshaw, John, English judge, 528
 speech when Cromwell dissolved Long Parliament, 1210
 his iron hat, 4863
 portrait, 521
 Braga, cathedral city of northern Portugal, church of Good Jesus, 5412
 Braganza, old cathedral city in north-west Portugal, general view, 5413
 Bragg, Sir Lawrence, British scientist, X-ray experiments, 6316
 Bragg, Sir William, British scientist, experiments in X-ray crystal analysis, 2592
 modern theory about light, 5690
 Röntgen ray theories and experiments, 6316
 portrait, 6309
 Bragi, god of poetry, marriage with Iduna, 2887
 Brahm, John, wrote song, The Death of Nelson, 1264
 Brahe, Tycho : see Tycho Brahe
 Brahma, who was he ? 5983
 Brahma fowl, dark, 4253
 Brahmaputra, great river of Asia, discharge of mud, 2493
 rises in Tibet, 6512
 Brahmia japonica, moth, its caterpillar in colour, 6209
 Brahmin, priestly caste of Hindus, 6854
 temples in India, 5627
 Brahmin and the Dagger, story, 3369
 Brahmin and the Goat, story, 3495
 Brahmin and the Pots, story, 5218
 Brahms, Johannes, German composer 150; portrait, 145
 Brahmstaedt, F., his sculpture, The Springtime of Life, 5259
 Bralla, Rumania, grain elevator, 5782
 Braille, Louis, inventor of system of writing and reading for blind, 3394
 Braille type, what is Braille type ? 3394
 Brain, absence in spineless animals, 451
 blood regulated by nerve cells, 1199
 breathing centre's position, 1322
 Broca's area the speech centre, 3050
 cleverest brains have largest surfaces, 2932
 effect of alcohol, 2680
 effect of chloroform, 828
 left side controls right-hand, 3047
 lining of cells, 3781
 music's special centre, 3049
 nerve cells from brain to heart, 1198
 nervous system's centre, 2799
 operation by Sir Victor Horsley, 2628
 protection by bones of skull, 1565
 right-handed bias, 3048
 size of a baby's brain, 1691
 speech centre, 3050
 spinal chord gives messages to nerves, 1669, 2800

sweat glands controlled by nerve centre, 1433
 thinking makes more blood go to the brain, 1199
 unprotected parts, 1692
 weight, 7068
 what is meant by new brain, 2680
 woman's smaller but not inferior to man's 1695

Wonder Questions

can the brain ever get filled up ? 6099
 does its shape mean anything ? 2541
 does the brain need food ? 442
 does it work while we sleep ? 5859
 is a clever man's brain large ? 6804
 is there a sign of the lost eye in our brain ? 4893

Pictures of the Brain

cells highly magnified, 3049
 man's compared with animal's, 2931
 nerve-cell, highly magnified, 2935
 nervous system, diagram, 2799
 proportion of skull occupied by, 2933
 top, showing cerebrum, 2933
 underneath view, showing nerve centres, 2933

See also Mind

Brain Coral, 6697
 Brainerd, David, American missionary, 1137
 Brake, automatic, on Underground railway, 4378
 railway, 3944
 vacuum brakes, working, 4072
 types used on trains, 3946-47, 4072
 Brake horse-power, what it means, 1922
 Bramante, Donato, Italy's great Renaissance architect, 6111
 succeeded by Raphael, 6191
 Bramber, village in Sussex, 1594
 Bramble : see Blackberry
 Bramble finch, bird, 2892
 Brambling, bird, characteristics, 2901
 Bramhall Hall, architecture, 6236
 Bramley, Frank, English painter, 2546
 Bran, in brown bread, 2428
 Bran, King, story, 3994
 Branched bur-reed, what it is like, 6012
 Brandenburg, Germany, State's rapid rise, 4296
 Brandes, Dr. Georg, Danish literary critic, 4939; portrait 4937
 Branding instrument, used for branding deserts, 4860
 Brandy bottle, name given to yellow water-lily, 6007
 Brangwyn, Sir Frank, R.A., British decorative painter and etcher, 2678
 his painting of Queen Elizabeth going aboard the Golden Hind, 2674
 Branly, Edouard, French pioneer of wireless telegraphy, 3362
 experimental work, 2098
 portrait, 3363
 Brant, Isabella, Rubens's first wife, 6674
 Braque, Georges, French cubist painter, 3046
 Brascassat, Jacques, French landscape and animal painter, 2790
 Brasenose College, Oxford, arms, in colour, 4988
 Brass, weight of a cubic foot : see Weight of Materials, 7074
 zinc and copper makes, 6004
 See also Strength of Metals, 7073
 Bratislava, Slovakian town, 4555
 view, 4565
 Brave Apprentice, story, 5586
 Brave Diver of Torbay, story, 6935
 Brave French Maid of Noyon, story, 6931
 Brave Grizel Hume, story, 5217
 story picture, 5214
 Brave Little Dog of the Wood, story and picture, 3821
 Brave Maid of the Mill, story, 6448
 Brave Old Duke of York, rhyme, music, and picture, 3442-43
 Bray, Ireland, 3072
 Brazil, South American republic, 7016
 discovered by Vincent Pinzon, 1020
 occupation by Cabral, 7000
 Portuguese royal family's exile, 5400
 rubber production, 1168
 yellow fever's former ravages, 2628

Pictures of Brazil

flags, in colour, 6972
 moth caterpillars, in colour, 6209
 mountain peaks, 2247
 people and scenes, 7010
 statue of Christ at Rio de Janeiro, 7014
 tapping a rubber tree, 1169

Maps of Brazil

animal life of the country, 7028-29
 general and political, 7023
 in colour, 7104
 physical features, 7024-25
 plant life, 7026-27
 Brazilian caracara, bird, 3633
 Brazilian lantern-fly, insect, 5719
 Brazilian sickle-beak, bird, 3147
 Brazilian tapir, animal, 1771
 Brazil nut, oil contained in, 2068
 oil used for lighting purposes, 2070
 formation in seed pod, 2065
 in colour, 2688
 Brazilwood tree, red ink and dye produced, 2940
 Bread, the staff of life, 2427
 black bread made from rye, 1698
 brown bread has germ and bran, 2428
 how to make, 752
 increase in popularity, 1578
 nourishment it yields, 1571
 why is new bread more indigestible than old ? 5491
 yeast's use in making, 699
 baked in electric oven, 2427
 food value, 2181
 oven and cooler in big bakery, 2429
 Breadfruit, in colour, 2688
 Breakwater, mussels for binding masonry, 4857
 Bream, member of Carp family, 4979
 tenacity of life, 5101

Pictures of Bream

bream, in colour, facing 5197
 black sea bream, in colour, 5100
 sea bream, in colour, 5099
 Brearley, Harry, inventor of stainless steel, 4104
 Breast water-wheel, 6351
 Breathing, all about it, 1317
 atmospheric pressure makes breathing possible, 5197
 control by brain, 1322
 necessity of oxygen to life, 200
 oxygen taken in and carbon dioxide breathed out, 1063
 sleep with your window open, 1323

Wonder Questions

does a seed breathe ? 5862
 where does our breath go ? 5006
 why cannot we breathe under water ? 5124
 why do we get out of breath when we run ? 4890
 why do we not see our breath on a warm day ? 815
 Breccia, form of rock, 2005
 Breda, town of Holland, scene, 5522
 Breches Bible, what is it ? 5734
 Breeze blocks, builder using them, 2533
 Bremer, Fredrika, Swedish novelist, 4942
 Brenner Pass, lowest pass over the Alps, view, 4558
 Brer Rabbit and Brer Fox, story, 5583
 Brescia, Italy, basilican churches, 448
 Breslau, Poland : see Wrocław
 Brest, naval port of France, 4172
 Bretton, Nicholas : see Poetry Index
 Brett, Jacob and John, pioneers of Dover-Calais cable, 1603
 Brewer, Cecil, architect, 6611
 Brewer, Ebenezer Cobham : see Poetry Index
 Brewster, Sir David, kaleidoscope perfected by, 6730
 Bricard, Gertrude, First Steps, sculpture by, 5131
 Brick, story of brick-making, 1789
 house of 180,000 bricks, 2526, 2528
 houses built of salt, 2375
 how to blow it over, with picture, 1867
 size of a common brick, 2414
 why did the Egyptians use straw for their bricks ? 3649
 why is there a hollow in the face of a brick ? 5352
 picture series of brick-making, 1789-92

Bricklaying, building a house, 2528-29
Brick wall, what does the pattern in a brick wall mean? 2414
Brickwork, weight of a cubic foot, 7074
Bride of Lammermoor, The, novel by Sir Walter Scott, 2722
Bridge, the story of bridges, 547
 first use of wrought iron, 547
 highest in Africa, 548
 Romans made first real bridges, 547
 rust prevented by painting, 560
 single-arch bridge at Pontypridd, 547
 steel first used in 19th century, 547
 Telford's hundreds of fine bridges, 2158
 why cast-iron failed, 547

Wonder Questions

does a bridge expand in the Sun? 6233
 why do soldiers break step while crossing a bridge? 5492
 why is straw sometimes hung under bridges? 4894

Pictures of Bridges

Birchenough Bridge, Southern Rhodesia, 3313
 caisson sinking in a river bed, 546
 concrete railway bridge near Orebro, Sweden, 5161
 concrete road bridge near Saltsjobaden, Sweden, 5160
 Golden Gate Bridge, San Francisco, 551
 men working in a caisson, 549
 series of famous bridges, 547-58
 suspension bridge over Dnieper River, 6027
 Yenisei, River bridge on Trans-Siberian Railway, 6028
 See also separate names, as Quebec Bridge

Bridge-board, game, 2118
Bridge of Sighs, Venice, 276
Bridges, Dr. Robert, poet laureate, 4080
 hymns written by, 1760

See also Poetry Index

Brigewater, Francis Egerton, Duke of, Father of British inland navigation, 4866, 5943

Brigewater Canal, Brindley's engineering feat, 4866

Barton aqueduct, 4881
 opening (in 1761), 4501

Bridled wallaby, 2395

Brienze, Lake of, 4666

Briggs, Henry, improved logarithm system, 6974

Bright, Sir Charles, English electrical engineer, 1603

Bright, John, English statesman and orator, 5454

portrait, with parents, 4135

Bright, Timothy, shorthand teacher in Elizabeth's day, 6844

Brighton, Sussex, pavilion designed by John Nash, 6472

arms, in colour, 4990

pavilion, 1524

yachts off West Pier, 345

Brill, fish's life-story, 5105

in colour, 5100

Brimstone moth, 4040

with caterpillar, in colour, facing 5935

Brindley, James, English engineer, 5943

Brigwater Canal built, 4866

mending broken plough, 5945

portrait, 5939

Brine, Droitwich brine's origin, 1384

salt recovered, 1542, 1546

Brisbane, Queensland, Australia, description, 2575

Brisbane River, its discovery, 6064

Bristle fern, European, in colour, 1799

Bristleworm, with eggs, 6827

Bristly Griffithsia, seaweed, 3413

Bristly ox-tongue, what it is like, 5286

flower, in colour, 5393

Bristol, important English seaport, 5872

Pictures of Bristol

arms of the city, in colour, 4990
 cathedral, 1714
 cathedral, chapter house entrance, 5867
 cathedral, west front, 5882
 Normans building castle keep, 3151
 university arms, in colour, 4989
Bristol Freighter, aeroplane, 4688
Britain, did any Apostles come to Britain? 6103
 See also British Isles

Britain, Ancient, Roman invasion, 2397
 Anglo-Saxon invasions, 592
 Apostles said to have visited, 2400
 Augustine sent by Gregory the Great, 2278, 2644

barrows made by early Britons, 482

Caesar never conquered, 2399

Danish invasions, 595, 596

fields left fallow by Romans, 2174

Gauls traded in Kent and Isle of Wight, 3381

granite mountains now clay, 301

immeasurable antiquity, 2398

invasion by Northmen, 6919

Kentish tribes defeated by Caesar, 2398

last strongholds of early Britons, 588

life under Romans, 588

Macedonian traveller's visit, 2397

mentioned by Herodotus, 2399

Picts and Scots invade, 591

reliefs throw light on early customs, 588

rise of Christianity, 591, 594, 2400, 6918

Roman conquest, 2400, 2876, 6918

Roman ironworks and potteries, 3381

Roman occupation, 588

Roman walls, 590

settlement of Jutes, 592

wool factory started by Romans, 800

words from which place names are derived, 596

Pictures of Ancient Britain

Celts setting out to fight Teutons, 2645

everyday life in Roman Britain, 2401

houses and temples, 724

Men of the Ages walk down the Road of Time, 721

scenes of life in Roman Britain, 2401

Roman remains, 722, 723

Romans building a house, 589

Saxon remains, 725

Saxons at gates of London, 2643

map showing rocks of Cambrian and Silurian Ages, 886

Britannia, who is Britannia on a penny? 6106

and her flag, 2073

symbolical figure of, 3832

Britannia Bridge, Menai Strait, 548

Britannic, Cunard White Star motor liner, diesel engine, 3706

British architecture, almshouses and hospitals of olden times, 6240

architecture of today, 6469

castles of feudal times, 6235

colleges and universities, 6237

Elizabethan houses, 6237

Gothic style, 5870

guildhalls of Old England, 6240

manor houses, their development, 6236

Perpendicular style, 3840

Renaissance period, 6240

Roman buildings still visible, 5885

Saxon churches still standing, 5885

Tudor period, 6236

cathedrals and churches, 5875-82

churches, various details, 5867

Norman style, examples of, 5867

Tudor Age, examples of, 1085-88

Wells cathedral, 5865

See also Architecture : and names of towns and buildings

British art, the story of English painting and sculpture is told in the following chapters :

Britain's Art Begins, 1923

Britain's Golden Age, 2049

Romney and Lawrence, 2175

British Landscape Artists, 2301

Turner and Water-Colour Men, 2419

Painters of Yesterday, 2543

British Painters of Our Time, 2867

Our Own Sculpture, 4765

animal painters of 19th century, 2544

atmosphere that helps painters, 3286

colour instinct we owe to climate, 2301

decorative artists of today, 2678

Grinling Gibbons and the wood-carvers, 6732

Holbein's influence, 1923

illumination of manuscripts, 1923

Impressionist movement, 2930

insularity of British art, 2667, 4765

mezzotint work, 2426

miniature painters, second period, 2419

miniature school, 2049, 2419

New English Art Club, 2668

Norwich landscape painters, 2306

painters of 19th century, 2543, 2667

portrait era that was Britain's Golden Age, 2049, 2175

Pre-Raphaelite movement, 2546

Scottish school of 19th century, 2545

sculpture, 4765

stained-glass windows, 6731

Van Dyck's influence, 1928

wall-paintings in churches, 1923

water-colour school, 2420

paintings series, 1925-7, 2053-60, 2177-80, 2303-5, 2421-5, 2549-56, 2669-76

sculptures, 2769-72

See also names of painters and sculptors

British Broadcasting Corporation, its work, 2220, 5107

Brookman's Park station, 5107

television transmissions, 2344, 5110

Brookman's Park station, 2089

control room, 2215

Droitwich transmitting station, 2094

picture-series of Broadcasting House, 5111-19

television pictures, 2341, 2343, 2345

British Columbia, Canada, 2196, 2320

industries, 2323

water power, 5606

Pictures of British Columbia

arms of the province, in colour, 4985

first council of settlers, 2082

flag, in colour, 6967

forest scenes, 2169, 2373

Fraser Canyon, 2199

logs for pulp-mills, 5357

Malahat Drive, Vancouver Island, 2204

pipe-line of wood, 5606

river of logs, 5359

Vancouver, 2200, 2330, 2331

British Constitution, Declaration of Rights drawn up, 1214

extension of civic rights to Catholics, Dissenters, and Jews, 1585

laws written and unwritten, 4535

personal government by sovereign ends on accession of George I, 1327

Reform Bill (of 1832), 1585

the People's Magna Carta, 836

unfair methods of government that were changed in 19th century, 1585

British East Africa : see Kenya Colony

BRITISH EMPIRE AND COMMONWEALTH

The references given below are mainly concerned with the British Empire and Commonwealth of Nations. See also names of countries.

Rise of Britain Overseas, 2071

Outposts of the Empire (East), 3417

Outposts of the Empire (West), 3553

Resources of the Commonwealth, 6003

area one-fourth of the world, 2071

cotton area, 2074

flag, the Union Jack, 6962

flags described in detail, 6963

food production, 2074, 6004

languages spoken, 2072

merchandise, 2074

mineral resources, 2074, 6004

oil production, 2074, 3423

peace between one-fourth of the world's people, 6006

population one-fourth of mankind, 2071, 6003

products and trade, 2074

races under the flag, 2072

raw material production, 6005

religions of every kind, 2072

spirit of comradeship that makes many people one, 2074

trade within the empire, 2074, 6005

what it stands for, 2076

white population, 2041, 6004

flags, in colour, 6965-68

history pictures, 2077-84

scenes and people in Outposts of Empire, 3417-36, 3555-62

wireless stations, 2095

map, in colour 7078

See also British Isles ; England ; Canada ; and so on

British Empire Exhibition, gold cup of 13th century, 6740

Government building, 6003

British European Airways, Vickers Viking aeroplane, 429
British false scorpion, 5599
British Guiana: see Guiana, British
British Honduras: see Honduras, British

BRITISH ISLES

For all names of towns, rivers, and so on in the British Isles see separate names. The main story of the British Isles is told in the following pages:
 Our Homeland, 209
 Seeing Our Homeland From the Sea, 337
 Our Great and Little Hills, 461
 England in the Long Ago, 587
 The people's Magna Carta, 835
 Fighting for the Throne, 951
 Times of the Tudors, 1073
 Times of the Stuarts, 1205
 From the Stuarts to Napoleon, 1327
 Napoleon and his conquerors, 1441
 Prosperity in 19th century, 1581
 Our Century Begins, 1705
 Our Country Between the Wars, 1823
 Statesmen of our Land, 2133
 National Arms and their Story, 4983
 archaeological discoveries in, 6997
 Beveridge scheme of Social Security, 1945
 canal mileage, 4866
 civic rights extended to Catholics, Dissenters, and Jews, 1585
 climate and the Gulf Stream, 2496, 5018
 coalfields, 2834, 2837
 cotton's effect on British industry, 171
 Eakring, Nottingham, -oil production, 2968
 Education Act (1944), 1948
 Family Allowances Act, 1943
 free market and trade, 5263
 general strike (1926), 1827
 geological formation, 767, 1011, 1505, 1633, 1877
 government methods changed in 19th century, 1585
 humanity's growth in 19th century, 1582
 iron industry, 2834
 miner's strike (1921), 1828
 Napoleon's blockade, 4372
 nation founded, 692
 National Government formed, 1828
 national wealth, 5883
 part of the Continent in prehistoric times, 5248
 penny post and telegraph, 1584
 petroleum discoveries, 2961
 population and that of the Empire, 2041, 5253, 6003
 population's rate of growth, 5863
 railways, 3944, 3950
 roads neglected for years, 2157
 Second World War, 1941
 Silurian period, 1009
 smaller nations helped in their struggles for freedom, 1588
 Social Security scheme, 1945
 submerged during Glacial period, 5248
 survey of, 909
 trade winds and climate, 2620
 trade with colonies, 2074
 water power resources, 6004
 where rainfall is heaviest, 2621
 writers in 19th century, 1588
 how many British Isles are there? 5818

Pictures of the British Isles
 ancient monuments, 1949-52
 coasts of our Homeland, 345-50
 oil-boring, 3086
 our great and little hills, 469-73
 Rides on British Railways, 1711-14, 1589-94, 1831-36
 scenes, 841-4; ruined walls, 961-4

Maps of the British Isles
 Carboniferous Age, 1258
 counties of England: see pages 7109 and 7153
 Cretaceous Age, 1634
 Devonian Age, 1134
 Eocene Age, 1754
 geological map, 766, 767
 hills, rivers, and towns, 218-19
 historical events, 598-602
 Jurassic Age, 1506
 natural features, 726-27

physical features, in colour, 7080
 Pliocene and Pleistocene Ages, 1878
 rainfall, 6723
 temperature, 6722
 Triassic Age, 1382

See also Britain, Ancient; British Empire; England; Scotland; Ireland; and Wales
British lantern-fly, insect, 5719
British Museum, Anglo-Saxon Chronicle, 596
 Anglo-Saxon relics, 594
 Apollo, head of, 4403
 Apollo's temple, frieze from, 4144
 Assyrian art, 3902, 5377, 6871
 Athene Parthenos, copy, 4143
 Bede's book, copy, 594
 British relics, 588
 built by Sir R. Smirke, 4228
 Central American relics, 6998
 Chares, Greek statue of, 4026
 charters, early English, 718
 Cotman's drawings, 2306
 Cozen's drawings, 2420
 Diadumenus, copy, 4140
 Diana's temple, fragments, 4395, 5500
 Edward VII Galleries, 6611
 Egyptian statuary, 3892
 Elgin marbles described, 4143
 Gainsborough's drawings, 2052
 Girtin's water-colours, 2424
 Garry tomb, 5500
 illuminated manuscripts, 450
 Julius Caesar, statue, 4404
 Lindisfarne manuscript, 1923
 Mausoleum at Halicarnassus, figures from, 4278
 Nereid monument, model, 5500
 Norman conquest, history, 717
 Shalmaneser's great gates, 6740
 Wingless Victory, frieze from temple, 5498
 Wycliffe's Bible, 956
 view of the British Museum, 1216
British Nautical Almanac, 3279
British Navy, Alfred the Great's beginning of, 891
 in First World War, 1709
 Union flag used under Charles I, 6962
 flags, in colour, 6965-66, 6968
British North Borneo: see Borneo, British North
British Overseas Airways Corporation, airliner services, 429-431
 picture series, 432-438
British Railways, formed by nationalisation of four main companies, 3950
 traffic organisation, 5885
 picture series, 4067-76, 4191-4200
 See also Railway, and names of Regions
British School, State schools' forerunner, 4962
British Transport Commission, public transport controlled by, 3950
British Thermal Unit: See Units of Measurement, 7071
Britomart, Princess, story, 5922
 rescuing the Lady Amoret, 5923
Britons: see Britain
Brittany, France, remains of prehistoric huts, 5376
 peasant types, 4162
Brittle bladder fern, in colour, 1797
Brittle starfish, under microscope, 1914
Brixham, Devon, prehistoric remains, 1880: harbour, 347
Brixworth, old Saxon church, 5885
Broad bean, vegetable, 2438
Broad-bill, eastern bird, 3143, 3148
 species, in colour, 3143, 3144, 3147
Broad-bordered yellow underwing, moth and caterpillar, in colour, facing 5935
Broad buckler fern, in colour, 1800
Broadcasting House, London, description, with pictures, 5108
 its basements, 4378
 television transmission experiments, 5110
 sculpture on, by Eric Gill, 4765
 For Broadcasting: see Wireless, and British Broadcasting Corporation
Broad-leaved garlic, what it is like, 4780
 flower, in colour, 4906
Broad tachina, insect, in colour, 5714
Broca, M., speech centre in brain discovered by, 3050

Broccoli, vegetable, 2438
 picture, 2437
Brock, Thomas, British sculptor, 4768
 Moment of Peril, sculpture, 4656
Brocken, what is the spectre? 3168
Brocket, American deer, 1404
Brockhurst, Gerald, English painter, 2677
Brome Grass, various species, 582, 3309-10
Bromfield, Louis, American writer, 4334
Bronchi, air tubes of the lungs, 1320
Brontë, Anne, novelist and poet, 3582
Brontë, Branwell, ne'er-do-well brother of three famous sisters, 3583
Brontë, Charlotte, English novelist and poet, 3582
 portrait, with parents, 4134
Brontë, Emily, English poet and novelist, 3582, 4077
 Brontë sisters writing, 3583
 See also Poetry Index
Brontosaurus, arrival in the world, 11
 size and height, 1508
 See also Dinosaur
Bronze, discovery of its use, 315
 early craftsmen in, 6740
 strength of, 7073
 gates of campanile of St. Mark's, Venice, 6733
 lamp in Naples, 6733
 plaque of 18th century, 6735
Bronze Age, art mainly decorative, 315
 blocks set up at approach to tombs, 315
 in Britain, 6997
 prehistoric house, 724
 stone circle, 724
Bronze club dragon-fly, insect, in colour, 5713
Bronzed corymbites, beetle, in colour, 6336
Bronzed soft-skinned beetle, in colour, 6336
Bronzino, Christofano Allori, Florentine portrait painter, 820
Portraits by Bronzino
 Ferdinand de Medici, 823
 Grand Duchess Eleanor, 824
 Maria de Medici, 3537
 Piero de Medici, 824
Brooch, Saxon relic found in Kent, 725
 how to make one in sealing wax, with picture, 4342
Brooke, Sir James, British Rajah of Sarawak, 3424
 treaty with Sultan of Borneo, 2083
Brooke, Rupert, English poet, 4083
 See also Poetry Index
Brooke, Stopford Augustus, Irish author and literary critic, 3831
 See also Poetry Index
Brooklime, what it is like, 6011
 flower, in colour, 6129
Brookman's Park, B.B.C. station, 5107
 transmitting station, 2089
Brooks comet, career, 3602, 3607
Broom, what it is like, 5020
 flower, in colour, 5141
 fruit, in colour, 3672
Broom-rape, member of genus *Orobanchae*, 6496
 flower, in colour, 5143
Brougham, Lord Henry, part in people's struggle for freedom, 1585
Brougham, how carriage got its name, 6232
Broussa, Turkey: see Bursa
Brown, Arnesby, English painter, 2677
 Drinking Pool, painting, 3780
Brown, Professor E. W., his nautical almanac, 3478
Brown, Ford Madox, English pre-Raphaelite painter, 2546
 stained-glass windows designed by, 6731
 use of water colours, 2425
Pictures by Ford Madox Brown
 Christ washing Peter's feet, 2551
 Cordelia appeals to King Lear, 1106
 Dalton collecting marsh fire gas, 6315
 Elijah and the widow's son, 2430
 King Lear renounces Cordelia, 1105
 Oliver Cromwell, 525
 Opening of Bridgewater Canal, 4501
 Sixteenth-century shop, 3381
 The Coat of many Colours, 991
 Trial of Wycliffe, 119

Brown, John, American anti-slavery leader, 3245, 3239
on his way to execution, 3245
Brown, Sir John, founder of Clyde shipyards, 4104; portrait, 4102
Brown, Thomas Edward, Manx poet, 4081

See also Poetry Index

Brown argus butterfly, with egg, caterpillar, and chrysalis, in colour, 6205
Brown bear, habits and food, 786
Brown bent grass, 3305
Brown Bull of Ulster, story and picture, 1275

Browne, Frances, Irish story-writer, 401
Browne, Thomas Alexander; see Boldrewood, Rolf

Browne, William; see Poetry Index
Brown hairstreak butterfly, with egg, caterpillar, and chrysalis, in colour, 6208
Brownie of Snaefell, legend, 2020
Browning, Elizabeth Barrett, English poet, 3455

historical interest of poem, *The Cry of the Children*, 1584
home in Wimpole Street, London, 3454
portrait, 3455

tomb in Florence, 3454

See also Poetry Index

Browning, Robert, English poet, 3455

Pictures of Robert Browning

as a young man of twenty-one, 3455
aged sixty-five, 3455
home at Paddington, 3454
house at Kensington, 3454
house in Venice where he died, 3454
view from his Paddington house, 3454
where he walked by the Arno, 3454

See also Poetry Index

Brown owl, bird, in colour, 2897

Brown rat, 1033

Brown tick, insect, 5599

Buang, or Malaya bear, 792, 790

Bruce, Sir David, British physician and bacteriologist, 2627; portrait, 2623

Abyssinians terrified by, 3005

portrait, 2997

Bruce, Michael; see Poetry Index

Bruce, Robert, Scottish king and national hero, 952

said to have been born at Turnberry, 341

granting a charter, 953

statue in Stirling, 1338

Bruce, Dr. William Spiers, Antarctic explorer, 6556

Bruce and Spider, picture to poem, 1339

Bruck-Lajos, Louis, Ruth Gleaning, painting, 1618

Brueghel, Pieter, Flemish painter, 1058

picture of children playing, 1057

Bruges, Belgium, architecture of cathedral, 5992

Maison de l'Ancien Greffe, 6371

medieval jewellery centre, 5526

medieval wonders, 5650

Memling's picture of St. Ursula at Cologne, 1056

Pictures of Bruges

belfry in the market place, 5653

halles with belfry, 5996

House of France, 5658

Maison de l'Ancien Greffe, 6364

quiet corner, 5658

town hall, 5653

Brugh, John van; see Vanbrugh, John

Bruihe, how to treat, 6178

Brundrit, Reginald C., English artist, 2677

Brunel, British protected State in Borneo, 3425

Brunel, Isambard Kingdom, English railway engineer and naval architect, built steamship *Great Western*, 3214, 3738

Thames Tunnel work, 5946

portrait, 3733

Brunel, Sir Marc Isambard, English engineer, quadrant invented by, 5944

Thames Tunnel built by, 6217

in a diving bell, 5947

inspiration for the *Thames Tunnel*, 5941

Brunelleschi, Filippo, Florentine architect, 4522, 6108

great dome of Florence built by, 4720

portrait, 4715

Brünn, or Brno, Moravia, Mendel's

* monastery garden, 5578

Brunner, Sir John, a creator of industry, 4106; portrait, 4102

Bruno, Giordano, Italian scientist and writer, 4583

Bruno, St., 11th-century saint, Le

Sueur's paintings of his life, 1684

Zurbaran's painting in Seville, 1308

with Pope Urban II, painting by

Zurbaran, 1311

Brush, George de Forest, American

painter, 3288

his painting of a family group, 3296

in the Garden, painting, 3296

Brush-tailed wallaby, 2394

Brush turkey, bird, 4251

Brussels, capital of Belgium, 5650

16th-century tapestry, 6738

splendid town hall, 5651

scenes, 5645-9, 5660, 5665

Brussels sprouts, origin of, 4434, 1203

Brutus, in Shakespeare's *Julius Caesar*, 6292

Brutus, Lucius Junius, Roman patriot, 4350

sees death of traitor sons, 4351

Bryant, Arthur, British writer, 3823

Bryant, William Cullen, American poet, 4202; portrait, 4201

See also Poetry Index

Bryant and May, number of matches

produced in a year, 3641

Bryaxis, sculptor, work on mausoleum of Halicarnassus, 4277

Bryce, Lord James, British statesman and historian, 3828; portrait, 3827

Brygos, vase painter of Greece, 324

Bryn Celli Dhu, ancient tomb in Anglesey, 6997

Bryony, meaning of name, 4289

tendril movement, 580

See also Black and White Bryony

Bryophyta, plant sub-kingdom, 3412, 6490

Bryopsis, feathery, seaweed, 3414

Brythons, early rulers of Ireland, 3064

Bubalis, fish, in colour, 5097

Bubastis, ancient city, 6867

Bubble, what a bubble is, 6468

how a soap bubble holds together, 311

how to blow bubbles, 3348

what makes a bubble rise and fall? 312

Bubble-shell, 1180

Bubonic plague, Black Death probably

a form of, 6468

Buchan, John (Lord Tweedsmuir),

Scottish poet and writer, 3712

portrait, 3711

See also Poetry Index

Buchanan, Robert; see Poetry Index

Bucharest, capital of Rumania, 5771

cathedral, 5782

general view, 5783

Russian basilica, 5783

Buck, Pearl, American writer, 4335

Buck-bean, plant, 5890, 6493

flower, 5889

fruit, in colour, 3670

Bückeburg, Germany, church, 6369

Bucket-dredger, removing gravel, 2916

Buckingham, George Villiers, Duke of,

favourite of James I, 521, 4006

Buckingham Palace, architecture, 6472

floodlighted, 1099

general view, 1217

view from grounds, 6469

Buckinghamshire, English county,

places in, 7153

road map, 7125

Buckland, Dean, geologist, 5574

mammoth steak served at dinner, 2028

Buckles, Saxon, picture, 725

Buckler fern, pictures, 1797, 1799-1800

Buck moth, of U.S., caterpillar, in

colour, 6209

Buck's-horn plantain, hydrophobia

remedy, 5784

flower, 5759

Buckthorn, common, member of genus

Rhamnus, 6492

fruit, in colour, 3667-9

sea, flower, 5761

Buckwheat, what it is, 1702

relation of great watery dock, 6011

use, 5520

Bud, scaly, 6494

Budapest, capital of Hungary, 4551
oldest Underground railway, 4376
story of the flood boatman, 3371
Academy of Sciences, 4564
basilica, 4564
central market, 4564
Houses of Parliament, 4561
River Danube, 4564
Buddha, title of Gautama, founder of
Buddhism, 5077
huge Japanese statue, 6622
meaning of word, 2030
stories told by the Buddha, 4738

Pictures of Buddha

avenue of statues in Japan, 2031
figure, 5077
rock-image in Ceylon, 2816
sculpture in Burmese temple, 2031
statue at Kamakura, 5078
statue in Buddh-Gaya temple, 5084
with pupils at Bangkok, 2029
Buddha and the Squirrel, story, 5094
Buddhism, belief explained, 2030
Bo tree regarded as holy, 3051
effect on architecture, 5626
in China, 6503
its foundation, 5077
Japan adopts, 6618
rise in India, 2944
priest in Japan, 6627
Buddleia, flower, 6383
Bude, Cornwall, quay, 346
Budgerigar, bird, habits, 3502, 3499
Budget, what it is, 4537, 4658
Buenos Aires, port of Argentina, 7000, 7016
pictures, 7009
Buffalo, many varieties, 1156
herd in Indian river, 2956
Buffalo gnat, life-story, 5489
Buff cap, edible fungus, 3411
Buffon, Count Georges de, French naturalist, 5570; portrait, 5569
Buff Orpington, domestic fowl, 4253
Buff-tip moth, with caterpillar, in colour, facing 5935
Buff with a wand, game, 1746
Bug, big insect family, 5720
plant bug, 5721
scarlet, in colour, 5714
Buganda, correct name of Uganda Protectorate, 5316
See also Uganda
Bugle, common, member of Labiate family, 4782, 6496
flower, 4778
Bugloss, small flower, in colour, 5142
viper's, flower, in colour, 4419
Building, house-building on a hill top, 2525
oldest stone building discovered at Sakara, 6868
Old-World buildings, 5375
timber imported from abroad, 5284
world's highest buildings, 7060

Wonder Questions

can the foundations of a building be

relaid? 5368

how were the Pyramids built? 308

what were the first buildings like? 3769

which is the best stone for building? 4016

buildings of the Old World, 5374, 5375, 5381-88

picture-story of a house, 2527-37

See also Architecture and House

Building Research Station, for testing

materials, 6608

Bukken Fiord, Norway, 5150

Bukovina, Rumania acquires Austrian

district, 4548

Russia takes part from Rumania, 5772

Bulawayo, Southern Rhodesia, 3312

Bulb, Holland's industry, 5524, 6494

Bulbiferous coral root, flower, in colour,

4286

Bulb mite, insect, 5599

Bulbous buttercup, 4415, 4412

Bulbous laminaria, seaweed, 3415

Bulbul, Eastern bird, 3145

picture, in colour, 3261

Bulgaria, Balkan State, general descrip-

tion, 5772

Russia frees, 5896

surrender in First World War, 1709

flags, in colour, 6972

scenes and types, 5773, 5784-85
 maps, 5786; in colour, 7089
Bull, John, regarded as composer of
 God Save the King, 6839
Bull, Olaf, Norwegian poet, 4942
Bull, why does red irritate it? 6233
 British breeds, 1160
Bulla, bubble-shell, 1180
Bulbase, variety of sloe, 4040
 fruit, in colour, 3667
Bull and the Goat, fable, 3992
Bullant, Jean, French architect, 6360
Bulldog, 670, 666
Bulldozer, mechanical excavator, 3033
Bullfinch, singing in captivity, 2902
 feeding habits, 6854
 in colour, 2899
 nest and eggs, 2903
 perching, 2892
Bull-frog, amphibian, 4741
Bullhead, sea fish, 5102
Bullock's oriole, bird, in colour, 3261
Bull terrier, dog, 666
Bulrush, confused with reed-mace, 6012
 member of order Cyperaceae, 6497
 flight of seeds, 947
 See also Papyrus
Bumpy, **Bumpy**, **Bump**, nursery
 rhyme picture, 3080
Bundy, Edgar, his picture of Grinling
 Gibbons and John Evelyn, 1851
Bungalow, concrete construction, 2535
Bung the bucket, game, 3476
Bunhill Fields, London, burial place of
 Bunyan and Defoe, 1480
Bunin, Ivan Alexeievitch, Russian writer,
 4820
Bunker Hill, battle of, first fight in
 the American War of Independence;
 John Trumbull's painting, 3286
 historic flag, in colour, 6971
Bunsen, Robert William, German
 chemist and electrician; his electric
 cell, 482
Bunsen burner, 3336
Bunting, large bird family, 2902
 two yellow species, 2904, 2892
 species, in colour, 2767, 3021, 3264
Bunting, reed, in colour, 2766
 nest and eggs, 2903
 perching, 2892
Bunyan, John, English Nonconformist
 writer and preacher, 1478
 his *Pilgrim's Progress*, story 6781
 bell-ringing considered a sin, 1334
 imprisonment by Charles II, 1210
 Pictures of John Bunyan
 leaving his wife and children, 1479
 prison on Bedford Bridge, 1477
 reading with his wife, 1479
 statue at Bedford, 1833
 See also Poetry Index
Buon, Bartolommeo, work on Doge's
 palace at Venice, 6114
Buonarroti: see Michael Angelo
Buoy, authorities responsible for main-
 taining, 3166
 for use in cable-laying, 1607
Burbank, Luther, American horticul-
 turist and botanist, 5578
 cactus spines abolished, 3058, 1200
 new kinds of almond and walnut, 2066
 plant cultivation wonders, 1202
 wheat cultivation, 1572
 work on garden flowers, 6260
 portrait, 5569
Burbank rose, flower, 6384
Burbidge, Sir Richard, a creator of
 industry, 4109; portrait, 4102
Burbot, English fish, 4976
 in colour, facing 5197
Burchell's zebra, 1895
Burckhardt, Johann Ludwig, discovery
 of Rock City of Petra, 6988
Burdock, heathland varieties, 5022
 seeds scattered by animals, 948, 5021
 great burdock, flower, in colour, 5142
Burgas, Black Sea port of Bulgaria, 5774
Burgers of Calais, monument by Rodin
 at Westminster, 4048, 4647
 story of sculpture group, 954
Burghley, Lord: see Cecil, William
Burghley House, 6237, 6245
Burgkmair, Hans, German painter, 1188
 his portrait of Martin Schongauer, 1186

Burgomaster and the Lion, story, and
 picture, 3247
Burgos, city of northern Spain, 5278
 architecture of cathedral, 5994
 Casa de Miranda, 6379
 cathedral, exterior, 5996
 cathedral, lantern, 6001
 general view, 5280
 Santa Maria gate, 5281
Burgundy, Netherlands included in
 dominions of, 5527
Burke, Edmund, Irish orator and
 writer; Crabbe's benefactor, 3953
 denunciation of British American
 policy, 1330
 praise for John Howard's work, 5450
 at trial of Warren Hastings, 6225
Burke, Robert, Australian explorer,
 6070; last days, 6067
Burma, country of south-east Asia, 2814
 tales told to Burmese children, 5094

Pictures of Burma

Buddha sculpture in temple, 2031
 bullocks working in rice fields, 1703
 Burmese girls, 2817
 Chindwin River, timber raft, 2817
 cultivating rubber plantation, 2565
 elephants moving timber, 2025
 flag, in colour, 6972
 Kado temple, 5082
 maps, 2812, 2823
 map, in colour, 7095
 Pegu, monster guarding a pagoda, 2817
 Rangoon, scenes, 2817, 5084
 Rangoon surrenders to British, 2078
 Shwee Zeegong Temple, 5635
Bur marigold, member of genus *Bidens*,
 6493
 nodding flower, in colour, 6128
Burma Road, highway into China, 2814,
 6509
Burmese frog, amphibian, 4739
 Burn, how to treat one, 6178
Burnand, Eugène, Swiss painter, 3398
Burne-Jones, Sir Edward, English
 pre-Raphaelite painter, 2548
 endeavour to revive tapestry weaving,
 6738
 stained glass windows designed, 6731

Pictures by Burne-Jones

Beguiling of Merlin, 6948
 Circe, character in the *Odyssey*, 3527
 Cophetua and the Beggar Maid, 2824
 King Arthur in Avalon, 6947
 Knights of King Arthur, 6946
 The First Easter Morning, 4827
 The Furies, 3513
 The Mirror of Venus, 3525
 The Sleeping Beauty, 4608
 The Song of Love, 2553
Burnet, Sir John, British architect, 6811
 Unilever House, London, designed by,
 6615
Burnet, great, flower, in colour, 4419
 salad, flower, in colour, 5395
Burnet rose, 5760; in colour, 5644
Burnet saxifrage, anise plant's rela-
 tion, 2808
Burney, Fanny, later Madame d'Arblay,
 English novelist and diarist, 1978
 character of her diary, 1852
 destroying her earliest diaries, 1849
Burns, James Drummond, Scottish
 writer of hymns, 1760
 See also Poetry Index
Burns, Robert, Scottish national poet
 and writer of songs, 1261, 2221
 meeting with young Walter Scott, 2009

Pictures of Robert Burns

his birthplace as it was, 2221
 portraits, 2222, 4131
 statue in Aberdeen, 1338
 with Highland Mary, 2223
 See also Poetry Index
Bur-parsley, what it is like, 4544
 small species, flower, in colour, 4662
Bur-reed, aquatic plant, 6012
 flower, 6009
Burroughs, John, American essayist,
 4332
 tale of a plant's perseverance, 204
 See also Poetry Index
Burrowing owl, bird, 3501
Bursa, formerly Broussa, town of Tur-
 key, scenes, 6140, 6142

Burslem, pottery trade centre, 302
Bursting the Balloon, game, 508
Burton, Sir Richard, English explorer,
 3006, 6871; portrait, 2997
Burton, Robert, English writer, 2378
Burying beetle, habits, 6331
 in colour, 6336
Burying the Hatchet, what does it mean?
 6598
Bury St. Edmunds, Suffolk, arms in
 colour, 4990
Bush antelope, 1401
Bushbuck, habits and home, 1399
Bush dog, animal of Guiana, 536
Bushel, its weight in different food-
 stuffs, 7089-70
Bush grass, seeds take flight, 947
Bush House, London, 6615
Bush vetch, member of Pea family, 4782
 flower, in colour, 4907
Buspa Valley, Indian scene, 2949
Bustard, habits and distribution, 3873
 great, 3869
Butcher's broom, member of *Amaryllis*
 family, 4780, 4778
 fruit, in colour, 3665
Butome, common, flowering rush, 6003
Butter, Australia's production, 2446
 British Empire's production, 2074
 fat easily digested, 2309
 margarine compound, 5615
 part of microbes in manufacture, 698
 why bread should be eaten with butter,
 2428
Butter Bean, vegetable, 2439
Butterbur, what it is like, 6010
 flower, in colour, 6129
Buttercup, bogland species, 5889
 different kinds, 4415
 downland species, 5288
 garden flowers evolved, 6260
 origin of name, 4415
 species found in cornfields, 4543
 species found in woods, 4782

Pictures of the Buttercup

bulbous species, flower, 4412
 corn species, flower, 4540
 life story, 334
 meadow species, flower, 4412
Buttercups and bees, game, 3108
Butterfly, great insect family, 6197
 antennae, 6198
 cocoons, 6202
 colour due to light refraction, 6211
 colouring due to blood cells, 1981
 communication with each other, 6211
 comparison with moth, 6197
 does not eat, 6199
 eggs laid on food for caterpillars, 6199
 emergence from chrysalis, 6211
 flying 1200 miles from land, 6198
 kinds that migrate from the Continent,
 6198
 scent, 6211
 useful and destructive, 6212
 how far can butterflies fly? 4016
 how long does a butterfly live? 6229
 is there a butterfly that stings? 3650

Pictures of Butterflies

British species, with egg, caterpillar,
 and chrysalis, in colour, 6203-6
 foreign species, in colour, 1417
 tongue under microscope, 1915
Butterfly blenny, in colour, 5098
Butterfly-orchis, flower, 5267, 5021, 5141
Butterwort, common, carnivorous plant,
 5887
 insect-eating habits, 204
 flower, 5891
Butress, in Gothic architecture, 5870
Butts, Edmund, portrait by John
 Bettes, 1928, 1927
Butts, Mary F.: see Poetry Index
Buxton, John, British poet, 4084
Buz, game, 1872
Buzzard, characteristics, 3631
 guarding its young, 3634
 in colour, 2768
 with wings spread, 3625
Buzzard, honey, in colour, 3022
Byelo-Russia, formerly White Russia,
 republic of U.S.S.R., 6014
 map, 5904
Byland Abbey, in Yorkshire, 964

By-law, what a by-law is, **4410**
Byliny, Russian legendary poems, **4815**
Byrd, Rear-Admiral Richard Evelyn, American explorer, aeroplane flight over the North Pole, **6444**; portrait, **6549**
 Antarctic expedition with aeroplanes, **6582**
Byrd, William, English musician, **142**, **4391**
 madrigals composed by, **4391**
 what are William Byrd's eight reasons for singing? **4392**
 playing the virginal, **149**
 See also Poetry Index
Byrom, John, his shorthand system, **6844**
 See also Poetry Index
Byron, George Gordon, Lord, English poet, **2595**
 friendship with Tom Moore, **1266**
 Sir Walter Scott satirised, **2011**, **2596**
 portrait, **2595**
 statue in Hyde Park, **1222**
 with Moore at Twickenham, **1267**
 See also Poetry Index
Byron, Mary: see Poetry Index
Byrsa, Dido's city from which Carthage sprang, **4639**
Byzantine architecture, art inspired by beginnings of Christianity, **5740**
 churches, **446**
 Westminster Cathedral, **5742**
 examples and development, **5739**, **5747**
Byzantine art, excess of brilliance causes its decay, **449**
 importance of enamel, **6738**
 mosaic work, **446**
 Siene painters influenced by, **565**
 vandalism by early Christians, **4406**
 triptych with Christ and Saints, **4405**
Byzantium, centre of early Christian art, **444**
 new Roman capital chosen by Constantine, **5740**
 See also Istanbul

C

Cab, origin of Hansom cab, **3038**
Cabanel, Alexandre, his painting of a Florentine poet, **3715**
 Louis IX Dispensing Justice, **2254**
 Louis IX with his Mother, **2255**
Caban Goch reservoir, supplies Birmingham with water, **1459**
Cabbage, cooking dissolves salts, **2183**
 evolution of wild cabbage, **1202**
 members of family, **2442**, **2808**, **5520**, **5763**, **6012**
 cultivated variety, **2437**
 wild, **1203**, **2437**
Cabbage lettuce, vegetable, **2438**
Cabbage, White, butterfly, habits, **6201**
Cabinda, West Africa, colour map, **7099**
Cabinet, inner circle of ministers, headed by the Prime Minister, **4539**
Cable, George Washington, American writer, **4333**
Cable: see telegraph cable
Cable's length, nautical measure, **7069**
Cable stitch, how to make, with picture, **5068**
Cabot, John, Venetian navigator, **1020**
 North America discovered (in 1497), **1020**, **4598**
 leaving Bristol, **1021**
Cabot, Sebastian, navigator, **1020**
 ill-founded claims of, **4598**
Cabral, Pedro, Portuguese navigator, **1020**
Cacao, story of plant, and seeds, and how it got its name, **2316**
Pictures of Cacao
 fruit growing in tree trunk, **2315**
 opening fruit in Trinidad, **2311**
 plant, in colour, **2688**
 pod-gathering in Ecuador, **2315**
 tree, in Fiji, **2315**
 See also Cocoa
Cachalot whale, **2147**
Cacomistle, carnivorous animal related to racoon, **792**
Cactus, adaptation to dry climate, **1071**
 kinds of, **3058**
 leaves turned into spines, **459**
 precaution against drought, **203**
 protection against enemies, **3058**
 spines got rid of, **3058**
 where and how it grows, **3057**
 various kinds, **207**, **3054-5**
Cactus dahlia, flower, **6378**
Cadbury, George, founded Bournville, **4108**, **6231**
Cadbury, John, founder of famous cocoa firm, **4108**
Cadbury, Richard, of the cocoa firm, **4108**; portrait, **4102**
Caddis-fly, insect, in colour, **5713**
Cadency, heraldic term, **4986**
Cader Idris, peak of the Cambrian Mountains, in Merionethshire, **1462**
Cadgwith, village in Cornwall, **842**
Cadiz, Spanish city and port, **5278**
 Raleigh destroys second armada, **5207**
 flags of British admirals at battle of, in colour, **6968**
 pyramid of salt, **5273**
Cadmium, element, use in atomic energy, **4814**
Caduceus, story, **4964**
 heraldic charge, **4986**
Caedmon, Anglo-Saxon poet, **239**, **594**
Caen, historic city of Normandy, France, **717**, **5746**
 Abbaye-aux-dames, **5752**
 Abbaye-aux-hommes, **5750**
Caerphilly Castle, Glamorganshire, **961**
Caerphilly Castle, locomotive, **4069**
Caesar: see Julius Caesar, and so on
Caesarea, Roman bridge at, **3464**
Caesarea Philippi, view, **3468**
Caesar family, **2873**
Caesarism, meant soldiers' rule, **2831**
Caesium, light-sensitive metal used in photo-cells, **2339**
Caffeine, brain stimulated by caffeine in coffee, **2173**
Caffieri, Jean Jacques, French sculptor who made portrait busts of 18th century writers, **4646**
Caffieri, famous Italian craftsmen of 17th century, **6740**
Caiaaphas, at trial of Jesus, **4588**, **4701**
Caicos Islands: see Turks and Caicos Islands
 life story, **575**, **374**
 statue, by G. Dupre, **5010**
Cairn, dog, **670**
Cairngorm, peak of the Grampians, **768**, **1301**
Cairo, capital of Egypt, **6873**
 famous mosques at, **5624**
 Museum reserves rights to keep everything found by excavation, **6867**
 Saracen architecture, **5624**
 Nubian fruit-seller, **6879**
 passengers landing from flying-boat, **431**
 scenes, **6873**, **6880-1**
Caisson, what it is, **6217**
 pictures, **546**, **549**
Caius, John, English physician and scholar, **5569**
Caius College, Cambridge, gate of honour, **6247**
Cake, how to make and decorate, with picture, **1121**
Calabar, West Africa, Mary Slessor's missionary work, **1143**
Calais, port of France, **4170**
 last British possession in France, lost in reign of Queen Mary, **1082**
 siege by Edward III, **954**
Calamint, member of Labiate family, **5022**, **6496**
 flower, in colour, **5142**
Calamite, reeds of Devonian Age, **1136**
 what they were, **1260**
Calcite, what it is, **4997**
 rock milk, mineral, **1303**
Calcium, chemical element, **4222**, **4470**
 in Sun, **3116**
Calcium carbide, discovery, **1228**
 made in electric furnace, **1228**
Calculating machine: see Adding machine
Calcutta, largest city in India, **2810**
 ceded to England, **2076**
 Black Hole of Calcutta, **2946**
 England establishes trading station in time of Great Mogul, **2945**
 famous buildings, **2821**
Pictures of Calcutta
 Jain temple, **5084**

Rashmanie temple, **5625**
 shopping quarter, **2951**
Calderon, Philip, English painter, **2544**
 Ruth and Naomi, **1619**
 St. Bartholomew's Eve, **3921**
Calderon, W. Frank, his painting, Exercising horses in Thrace, **1902**
Calderon, de la Barca, Pedro, Spanish dramatist and poet, **5058**
 portrait, **5055**
Caledonian Canal, Scotland, **2158**, **4867**
 scene, **4865**
Caledonian Railway, engine, in colour, **1044**
Calendar, dating of Christian, Jewish, Mohammedan, and Roman, **2295**
 Julius Caesar's reforms, **2874**
 Omar Khayyam's reformation, **5676**
Calgardup Cave, Western Australia, **2003**
Caliacra, Balkan province, Bulgaria takes from Rumania, **5774**
Caliban, in Shakespeare's Tempest, **6294**
Calico, growth of industry in Stuart Age, **1214**
Calico loom, used in cotton industry, **178**
Calidore, Sir, character in Spenser's Faerie Queene, **5919**
California, American state, Cretaceous rocks in, **1636**
 fig cultivation, story, **1940**
 insect pests in orchards, **5722**
 oil in, **3083**, **3085**
 telescope at Mount Palomar, **3978**

Pictures of California

cactus garden at Riverside, **3055**
 fig plantation, **1936**
 Hoover Dam, **5603**, **5605**
 irrigation, **5964**
 Lower Yosemite Fall, **2500**
 oilfield scenes, **3085**, **3088**, **3679**
 Salton Sea desert region, **2371**
 scenes, **3802**, **3803**, **3805**, **3807**, **3808**
 sequoia tree fallen, **3057**
 State flag, in colour, **6970**
 telescope at Mount Palomar, **3685**
Californian jay, bird, in colour, **3262**
Californian poppy, crimson variety, produced by Luther Burbank, **6260**
Californian quail, bird, in colour, **3141**
Caligula, Roman emperor, **2876**
 portraits, **1667**, **2878**
Calixtus, St., paintings in catacomb, **446**
Calla, scented variety, produced by Luther Burbank, **6260**
Callao, seaport of Peru, **7021**
Called to the Bar, what is meant by? **4777**, **5493**
Callier Pit, legend, **1149**
Callilephearis, ciliated, seaweed, **3413**
Callitricates, architect of lovely temple of the Wingless Victory, Athens, **5498**
Calliope, mythological muse of epic poetry, **3517**
Callipers, **6352**
Callisto, Great Bear named from mythological princess, **3519**
Callithamnion, seaweed, **3414-15**
Callion, early Greek sculptor, a native of Aegina, **4028**
Calorimeter, instrument for measuring the heat given off by a body, or for determining specific heat, **5566**
 how it works, **5565**
Calosoma, sycophant, beetle, in colour, **6335**
Caltrop, what it is, **5022**
 heraldic charge, **926**
Calumet, Red Indian pipe of peace, **5373**
Calvary, Jesus bearing Cross, **4823**
 painting by Morelli, **4825**
 three Crosses, **4821**
 view, **3467**
Calvin, John, French religious reformer and theological writer, **4454**, **6725**
 his teachings, **7056**
Calyciflorae, orders contained in, **6492**
Calyx, different forms of, **6495**
Cam, various kinds, **6351**
Camberwell beauty butterfly, with egg, caterpillar and chrysalis, in colour, **6203**
Cambium, what it is, **3544**
Cambodia, state of Indo-China, **5737**, **6512-13**

reliefs on walls of Angkor Thom, 6989
 Temple of Angkor Vat in, 6517
Cambrian Age, appearance of the Earth during, 765, 885
 duration of, 11
 fossil remains, 885, 887
 animal life, 886, 11, 887, 888
Cambridge, town of Cambridgeshire, architecture of colleges, 6237
 colleges founded by Margaret Beaufort, 1073
 FitzWilliam Museum, example of modern classic architecture, 6472
 Girtton and Newnham Colleges designed by Basil Champneys, 6472
 Grinling Gibbons's work, Trinity College, 6732
 Pembroke College chapel built by Wren, 6242
 round Norman church, 5868
 Senate House designed by Gibbs, 6470
 University Library, 6611
 window in King's College chapel, 6731

Pictures of Cambridge

arms of the town, in colour, 4990
 arms of university, in colour, 4988
 Caius College, Gate of Honour, 6247
 Emmanuel College, chapel, 6248
 Girtton College, 6474
 Newnham College, 6475
 Pembroke College, 6238
 Peterhouse, 5243
 St. John's College, 6235
 Senate House, 6474
 The Backs, 1835
 view of River Cam, 1832
Cambridgeshire, England, places in, 7154
 road map, 7131
Cambyses III, Persian king, 6387, 6802
Camden, U.S.A., Delaware River bridge, 554
Camel, animal family, 1525
 Bible journeys, 1525
 bone used as ivory, 1526
 Burke and Wills introduce camels into Australia, 6071
 world-wide distribution, 1533

Pictures of the Camel

Algerian women riding, 1531
 Arab family in desert with camel, 1529
 Arabian and Bactrian, 1532
 Arab lady alighting in desert, 1529
 Arabs' home on the back of their camel, 1530
 camel cart in India, 2956
 caravan crossing desert, 1530, 2371
 carrying Arab children, 1530
 carrying palm-leaf stalks, 1531
 crossing lake, 1525
 desert scenes, 1530, 2125, 6741
 loading in Australia, 2580
 near Sphinx, 6879
 ploughing the Nile banks, 1531
 Somali native with, 3319
 team taking wool across desert, 804
 train of merchandise in Asia, 1527
 See also under specific names

Camera, how it works, 4749
 colour films, 4754
 development of films described, 4751
 how to photograph without camera, with pictures, 2857
 lens described, 4750, 4756
 snapshots, how to take, with pictures, 5065
 parts of a camera, 4750
 photographs, series, 4751-55
 use in printing trade, 2408

See also Cinema and Photography
Cameron, Sir David, British artist, 2877
Cameroon, mountain in French Cameroons, 6742
Cameroons, French territory, 4049
 French mandate, 6749
 maps, 3196-8
Camillo, in Shakespeare's *Winter's Tale* 6052
Camillus, how he saved Rome, 5488
Camões, Luis Vaz de, Portuguese national poet, 5059: portrait, 5055
Camp, meals to prepare when in, with picture, 1993
Campaign, The, poem by Addison on battle of Blenheim, 1730
Campanella, Tommaso, Italian political writer, 4583

Campania, plain on Italy's west coast, 4910
Campanile, bell-tower introduced into architecture by early Christians, 5740
 campanile of Venice, its fall and rebuilding, 272, 274
Campanula, plant, genus of order Campanulaceae, 6493
 species of downlands, 5268
 flower, 6379
Camp bed, how to make spring mattress for, with picture, 6301
Campbell, Colin, architect, 6470
Campbell, Sir Colin, Scottish general, relieved Lucknow, 2947
Campbell, Roy Dunnachie, South African poet, 4206: portrait, 4201
Campbell, Thomas, Scottish poet, 1262, 3956
 portrait, 1261

See also Poetry Index

Campbell, William Wilfred, Canadian poet, 4205
Campbell-Bannerman, Sir Henry, British statesman, 1588, 1705, 2138
 portraits, 1705, 2133
Camphor, does it keep moths away? 6100
 how it is obtained, 2691
 where the tree grows, 2690
Campina, oil centre of Rumania, 5771
 oil derricks, 5782
Campine, or Kempenland, Belgian sandy plain, 5648
Campion, Thomas: see Poetry Index
Campion, plant, member of genus Silene, 6492
 Antarctic specimen, 5980
 varieties, 4290

See Red campion and so on

Cana of Galilee, view, 3467
Canaan, conquered by Israelites, 1363
 Israelites march to, 1118, 1239
 wars with Israelites, 1242
Canada, Dominion of, history and development, 2191, 2317
 Alcan Highway, 2663
 Arctic territory, 2196
 colonisation by France that led to war with England, 1830
 English saved by Wolfe, 4126
 of Quebec, 1830, 2319
 Hudson's Bay Company, 2318
 Federal Parliament, 2324
 literature, 4332
 mounted police: see Royal Canadian Mounted Police
 novelists, 4336
 part in World Wars, 2321, 2322
 poets, 4205
 races in, 2324
 radium, 2196
 resources, 2192, 6005
 tundra, 2126
 tunnels, 6556
 uranium, 2196
 water power, 5608, 6004
 Wolfe takes Quebec, 2319

Pictures of Canada

Alfalfa plant being stacked, 2189
 aqueduct under railway, Alberta, 1793
 arms, in colour, 4985
 Athabaska Glacier, 2193
 Bassano Dam on the Bow River, 5976
 Cartier meets Red Indians, 2190
 Champlain surrendering Quebec, 2082
 clover-field, Manitoba, 2187
 combine harvester, 2201
 Eskimo mother and child, 2200
 field of oats, 1700
 flags, in colour, 6965, 6967
 grain elevator at Fort William, 2191
 harvesting oats in Saskatchewan, 1697
 ice cutting on lake, 2193
 irrigation, 5973
 Jasper Park scene, 2373
 Lake of Bays, Ontario, 2497
 lumber jam on Montreal River, 2193
 Manitoba, field of clover, 2187
 Montreal, Victoria Bridge, 555
 Niagara Falls power generating station, 5604
 Ottawa Parliament Buildings, 2195
 people and scenes, 2197-2204, 2327-31
 postmen, 4636
 Quebec Bridge, 2317
 Quebec surrendered by Champlain, 2082

Queenston-Chippawa power generating station, 5604, 5605
 railway engine, 3509
 Rocky Mountains pass, 2197
 St. Lawrence river scenes, 2499
 scenes, 2197-2204, 2327-31
 timber industry, 5356-59
 tower for storing green fodder, 2189
 train leaving station at Windsor, 3205
 Upper Kipawa River scene, 2193
 water-power station, 5608
 Welland Canal, aerial view of locks, 4877
 wheat-field, 1577

Maps of Canada

general, 2332
 in colour, 7101
Canadian Mounted Police, Royal, formerly North-West Mounted Police, 2321
Canadian Northern Railway, 2321
Canadian Pacific Railway, difficulties of making, 2320
 aqueduct under line in Alberta, 1793
Canals, story of, 4865
 Albert Canal, Belgium, 5650
 biggest ship canals, 7059
 Brindley links Manchester and Liverpool, 5943
 English, alphabetical list, 7177
 hydraulic sledge used in cutting canals, 3032
 Telford's great work, 2158
 United Kingdom's mileage, 4866
 picture-story, 4871-82

See also under separate names

Canaletto, Antonio, Venetian painter of scenes in his native city, 935
Canary, song, 2902
Canary grass, 583, 3307
Canary Islands, volcanic island group off the north-west coast of Africa, Columbus's visit, 1018, 6754, 3307
Cannara, Federal capital of Australia, 2572
Canadian Parliament House, 2573
Candia: see Crete
Candido, Elia, statue of Venus, 5011
Candle, picture-story, 1669
 candle that can be eaten, 631
 electric lighting compared with candle-power, 1100
 firing one through wooden door, an example of power of motion, 4593
 House of Commons lighted by, 3648
 how to make a bottle blow out a candle, 1123
 materials used in manufacture, 1669
 why can we put out a candle by blowing? 4759
 fired through wooden board, 4593
Candle-power, explained: see units of measurement, 7071
Candiestick, how to make one from a glass of water, with picture, 3475
 wooden, in Verona church, 6735
Candle tree, fruit like candles, 3056
 where it grows, 3056, 3053
Candytuft, plant, member of genus Iberis, 6491
 flower, in colour, 4417
 white spiral, flower, 6384
Cane, section under microscope, 1911
Cane-bottomed chair, picture to poem, 3809
Cane rat, 1031
Cane-sugar: see Sugar
Canes Venatic, star cluster, 3975
Canina Luigi, Italian archaeologist, 3284
Canizzaro, Stanislas, physical researcher of, 6312
Cannae, battle of, fought in Apulia, Italy, in 216 B.C., 4352, 4795
Cannes, Riviera watering-place, 4171
Cannet, Henriette, effort to save Madame Roland, 3134
Cannon-ball, from Spanish Armada, 4859
Cannon-ball tree, relation of myrtle, 3056, 3059
Cano, Sebastian del: see Del Cano
Canopus, star, 3852
 brightness of, 2995
 compared with Aldebaran, 3728
 distance from Earth, 2995
Canossa, Italy, Hildebrand receives submission of Henry IV of Germany here, 4794

- Canova, Antonio**, Italian sculptor of the classical school, classic statue of Napoleon, 4647
how he modelled a lion from butter, 5466, 5467
athlete, in the Vatican, 1615, 4651
Cupid and Psyche, 4650
Cantabrian Mountains, northern Spain, 5270
Canterbury, Ecclesiastical capital of England, on the Kentish Stour; St. Augustine visits, 588
 Pictures of Canterbury
 arms of the city, in colour, 4990
 St. Martin's Church, 1590
 St. Thomas's Hospital, 1590
 West Gate, 1594
 Canterbury bell, flower, 5268
 sore throat remedy made from, 1438
 flower, 6379
 wild: see Nettle-leaved bellflower
Canterbury Cathedral, Black Prince's tomb, 954
murder of Thomas Becket, 720
Norman work, 5866, 5874
rebuilding about 1170, by architect of Sens Cathedral, 5871
shrine of Thomas Becket, 364
 Pictures of the Cathedral
 aerial view, 1822
 archbishop's arms, in colour, 4987
 crypt, 5867
 massive columns, 719
 Norman staircase, 719
 St. Augustine's chair, 725, 4860
 south porch and west door, 5867
 view from south-west, 5875
Canterbury Pilgrims, procession, 368
Canterbury Tales, The, Chaucer's great poem, 363, 5801
Cantharides, blister beetles that eat locust's eggs: Drake's joke in despatch to Queen Elizabeth, 6451
Cantilever bridge, first built over the Forth, 548
Canton, John, English electrical pioneer, 5327; portrait, 5323
Canton, William: see Poetry Index
Canton, metropolis of southern China, on Canton river, 6501, 6502, 6503
 Pictures of Canton
 family on houseboat, 6506
 general view, 6506
 Great Pagoda, 6505
 harbour, 6499
 Honam Pagoda, 5082
 main street, 6515
 Pearl river, 6505
 street of boats, 6505
Canute, first Danish Christian king and ruler of Norway and England, 3028, 5146
England wisely ruled, 596
rebuking his courtiers, 3027
Canvas-back duck, bird, in colour, 3261
Caoutchouc, obtained from banyan tree, 3051
plant, in colour, 2685: see also Rubber
Cape Breton Island, Canada, 2194
Cape crowned crane, bird, 3873
Cape girdle-tailed lizard, 4492
Cape hunting dog, 536
Capella, star, 3849
Cape of Good Hope, Diaz discovers, 777
Cape Province, South African province, 3187
arms of the province, in colour, 4985
Caper, plant, what it is like, 2808
in colour, 2686
Capercaillie: see Blackcock
Capernaum, synagogue ruins, 3465
view from north, 3465
Caper spurge, wild fruit, in colour, 3667
Cape St. Vincent, battle of, Nelson wins rank of rear-admiral, 1453
Capet, Hugh, first French king of France, 3918
Cape Town, South Africa, what is the table-cloth at Cape Town? 5371
British forces' entry, 2081
castle, 3189
cottage where Rhodes died, 3195
Houses of Parliament, 3189
Cape Verde Islands, group of Portuguese West African islands, lying off Cape Verde, 5402, 8752
Capillary, derivation of word, 1195
discovery, 1195, 5570
gases pass into blood by means of, 1199
red and white blood cells in the capillaries, 941, 1059
Capital (finance), building up of, 5140
demand and supply affect, 5640
what it is, and its importance, 5139
Capitalist, men who are workers and landlords, too, 5637
rewards of, 5639
who he is, 5140, 5637
Capitol, Washington, U.S.A., Sequoia's statue in Hall of Fame, 5459
Capitulum, in botany, 6495
Cap of Liberty, what is it? 6104
Capped langur monkey, with young, 162
Capping verses, game, 255
Capri, island at the entrance to the Bay of Naples, 2876
Caprifrig tree, used in fertilisation of Smyrna figs, 1940
fruit, 1937
Capsicum, cayenne pepper and chillies obtained from, 2804
member of same family as tobacco plant, 2804, 2942
Chinese giant capsicum, 2802
Capsule, fruit, 884, 6495
Captain of Industry, what it means, 5638
Capuchin monkey, 164
Capulet, in Romeo and Juliet, 6161
who were the Capulets? 4387
Capybara, animal, largest rodent, lives in South America, 1038, 1033
Carabus beetle, distribution, 6330
Caracal, member of cat tribe, 419, 424
Caracalla, Roman Emperor, 2881, 2879
Baths of Caracalla, ruins and reconstruction, 1780, 1787
Caracara, South American hawk, habits and food, 3632, 3633
Caracas, capital of Venezuela, 7022
birthplace of Bolivar, 893
Caractacus, ancient British hero, 2400
captured by the Romans, 590
brought before Roman Emperor, 2397
faces the Romans, 587
portrait, 1667
Caravaggio, Michelangelo da, Italian realist painter, 936
Courbet influenced by, 2923
influence on the Le Nain brothers, 1682
Lastman, Rembrandt's master, influenced by, 1558
Spanish artist Ribera greatly influenced by, 1308
his painting, Lute Player, 3535
Caravan, ancient Egyptians' trade carried on by, 427
Caraway, plant, 2436, 2808
Carbohydrate, digestion of, 2063
what carbohydrates contain, 2183
Carbolic acid, Lister's use of to sterilise wounds in surgery, 2624
Carbon, calcium and magnesium united by acid, 4470
compounds of, 4348
compounds, classified by Dumas, 6313
diamonds made from, 1228
essential to life, 830, 4347
in electric arc, 1097
in oil, 1551
percentage in coal, 2834
plants feed on through greenstuff in leaves, 202
radioactive carbon used in making steel, 4814
telephone contains grains of, 1414
Carbonate of soda, seaweed used in manufacture of, 3410
Carbon bisulphide, 4347
Carbon dioxide, action in rainwater, 642
air which contains too much will kill us, 1322
Cave of Dogs has layer on floor, 1323
choke damp of the miner, 2837, 3332
element of atmosphere, 203
how to make it, 6424
living creatures breathe out, 200, 460
making of in human body, and how it is got rid of, 1062, 1063
nature and formation, 3332
on Moon, 3452
plants feed on carbon and reject oxygen, 202
sodium carbonate carries it from the tissues to the lungs, 1063
solidification possible, 5319
weight of a cubic foot: see weight of materials, 7074
what it is composed of, 200
when the body gives off most, 1322
yeast plant turns sugar into, 699
Carbon filament, in electric lamp, 1098
Carbonic acid, gas, dry ice dropped on clouds to produce rain, 3395
true, 4348
Carboniferous Age, what the Earth was like, 1257
duration, 10
animal life of the period, 10, 1259
fish, 1257
fossil remains, 1259
limestone gorge in Ireland, 5732
vegetation, 1259
map of British Isles, 1258
Carbonisation of coal, 3335
Carbon monoxide, coal gas, 3336
composition, 4346
effect on colour in fire, 4395
Carbuncle, form of garnet, 1301
Carburetter, of petrol engine, how it works, 4322
position on motor-car engine, 4320
position on motor-cycle, 4326
Carcassonne, ancient city of Languedoc, France, 4171, 6358
cathedral architecture, 5990
old cathedral, 6001
Carchemish, identification, 6872
southern capital of Hittite Empire, 6872
Hittite god at, 6872
Card, games with cards: See Games
Greetings Cards, how to make, with pictures, 123
puzzling cards, which is larger? 627
robbers and the soldiers, trick, with picture, 5068
various tricks, 999, 2484
Cardiff, port of South Wales, arms, in colour, 4990
City Hall, 4409
Queen Alexandra Dock, 1461
Cardinal beetle, in colour, 6336
Cardinal bird, habits, 2901
in colour, 3143
red-crested, 2893
Cardinal honeysucker, in colour, 3262
Carding, process in cotton making, 175
Cardus, Neville, English writer on cricket, 3830
Carew, Lady Elizabeth: see Poetry Index
Carew, Thomas: see Poetry Index
Carey, Henry, English writer of songs, 1265
inspiration of Sally in our Alley, 1263
See also Poetry Index
Carey, William, missionary, 1137
mending boots, 1139
portrait, 1137
Cargo of Wheat, story, 285
Caribou, migration, 1404, 222
picture, 1398
Carillon, how is it worked? 6231
pictures, 2782-3
Carisbrooke, village in the Isle of Wight, picture, 963
Carl, Austrian Emperor abdicates (in 1918), 4548
Carles Antonin, statue of boy of Gaul, 5133
Carlisle thistle, member of Composite family, 5022, 6493
flower, 5761
Carlisle, capital of Cumberland, arms, in colour, 4990
street scene, 1834
Carlyle, Thomas, Scottish essayist and historian, 3215
genius defined by, 2602
his words on the Marseillaise, 1261
Life of Oliver Cromwell, 524
on charity, 4337
on Sir Walter Scott, 2720
Ruskin compared with, 3220
Whistler's portrait of, 2930
portrait, 3047
portrait, with mother, 4135
reading in his room, 3215

receiving his burnt manuscript, 3217

See also Poetry Index

Carman, William Bliss, Canadian poet, 4205; portrait, 4201

See also Poetry Index

Carmarthen, capital of Carmarthen-shire, scene by River Towy, 1461

Carmel, Mount, Elijah's test of Baal's power, 2482

view, 3469

Carmona, General Antonio, Portuguese statesman, 5400

Carnarvon, capital of Carnarvonshire, Edward II, the first Prince of Wales, born at, 952

arms, in colour, 4990

castle, 962

Carnation, when first brought to England, 6258

various species, 6382-83

Carnegie Corporation, grant for expedition to Ur, 6871

Carnegie Foundation, and the Wateler Peace Prize, 6852

libraries in United States, 3685

Carnival, novel by Compton Mackenzie, 3712

Carnivora, animals that feed on flesh, their characteristics, 417

food from deer and antelope, 1397

more numerous at birth than herbivores, 417

victims swift death, 1399

Carnot, Lazare, French war minister, 1442

Napoleon's military genius discovered by, 1442, 4372

portrait, 647

Carol II, king of Rumania, 5772

Carolus, value of: see old English Coins, 7070

Carp, characteristics and food of, 4978

surviving in Marie Antoinette's pond at Versailles, 4979

common carp, in colour, facing 5197

gold carp, in colour, facing 5197

Carpaccio, Vittore, Venetian painter, 280, 932

his painting, St. Stephen in Dispute with Doctors, 278

Carpathians, mountain range in Central Europe, 4547, 4550

Carpeaux, Jean Baptiste, French sculptor, 4648

Carpel, what it does, 332, 831

of buttercup, after being fertilised, 335

Carpentaria, Gulf of, deep gulf in the north coast of Australia, between Queensland and the Northern Territory

explored by a Dutch ship, 2378

Carpenter ant, resting, 5967

working, 5961

Carpenter bee, excavations, 5841

European, 5843

Carpentry, the boy carpenter's box of tools, and pictures, 121

bookshelves and bookends, how to make, with pictures, 2237

dog-kennel, how to make, with pictures 758

joints the boy carpenter should know, with pictures, 379

Carpet, how did the sisters cut the carpet, puzzle, with pictures, 3472, 3597

why does the Sun fade them? 2540

Carpincho: see Capybara

Carpophose, in botany, 6495

Carracci, The, school of painters founded at Bologna, 938

Carrageen, seaweed, 3413

Carrageen moss, Ireland's trade, 3068

Carrara, inexhaustible quarries worked for 2000 years, 5845

Michael Angelo quarries, 6185

quarries and yield of marble, 5846

marble quarries, 4922, 5846

Carrey, French artist whose drawings greatly helped restoration of Elgin marbles, 4144

Carrier pigeon, bird, 4118

Carrion crow, bird, in colour, 3021

rhyme and picture, 4570

Carroll, Lewis, English writer of fairy tales, 401; portrait 399

Mad Tea-Party, story, 6078

Tweddledum and Tweddledee, story, 6323

tells the story of Alice, 398

See also Poetry Index

Carron Tower, Antrim, built on land-slide, 2006

Carrot, cultivated variety, 2442, 4543

food value, 1436

house decoration made from a carrot, with picture, 2611

what the wild carrot is like, 4543

flower of wild carrot, 4540

varieties, 1203

vegetable, 2438

wild, 1203, 4905

wild, bird's nest variety, flower, in colour, 4905

Carruth, William Herbert: see Poetry Index

Carstens, Jan, Dutchman who explored Australian coast, 2379

Cartagena, port of Colombia, 7002, 7021

Cartagena, Spanish cathedral city and Mediterranean port, 5278

once New Carthage, 5272

general view, 5285

Carter, fish, in colour, 5098

Carthage, Dido founded, 4639

Hannibal's elephants, 2028

Hannibal's war with Rome, 6306

Phoenician colony, 770

rise as Rome's great rival, 1405, 4350

Romans destroy, 1406, 4353

Spain occupied by invaders from, 5272

west coasts of Africa and Europe explored by, 770

Cartier, Jacques, French navigator, explorer of St. Lawrence River, 1020, 2317

meets with Red Indians, 2190

Cartilage, bones connected with, 1567

Cartoons, how are film cartoons made? 3165, 6711

Cartouche, meaning of the term, 6875

Cartwright, Edmund, English inventor, deviser of the power loom, 172, 5942

portrait, 5939

Carving, Maori canoes, 198

examples in ivory, 70

See also Woodcarving

Cary, Alice: see Poetry Index

Cary, Lucius, Viscount Falkland, supporter of Charles I, 528

Caryatid, famous portico of the ancient Erechtheum, 5498, 4139

Casablanca, Moroccan Atlantic port, 6749

boulevard, 6764

Cashel, ancient capital of the kings of Munster, in Co. Tipperary, ruins of cathedral on a rock, 3062

general view, 3060

Cashew nut, what it is like, 2068

Casimir the Great, king of Poland, 5026

Caspian Sea, area and depth, 2494

seals as evidence of one-time connection with ocean, 912

Cassandra, in Greek legend, who she was, 4998

Cassatt, Mary, American painter, 3288

Cassava, plant, 2568

in colour, 2685

Cassia, what the plant is like, 2689

what the Biblical cassia was, 2807

Cassique, birds akin to orioles, 2895

Cassius, character in Shakespeare's Julius Caesar, 6292

Cassowary, bird, characteristics, habits, and home, 4370

blue-necked cassowary, 4369

Castalia, mythological fountain, 3530

Casté, customs among Hindus, 2811

origin, 8554

Castiglione, Balthasar, portrait, 824

Castile, Spain, 5056, 5270

reapers at work in, 5275

Castilleja elastica, plant, member of Nettle family, 2563

Castling-box, wonderful invention in printing newspapers, 2404

Cast iron: see Iron

Castle, English feudal castles, 3151, 6235

French fortresses and chateaux, 6357

Castle Howard, Yorkshire, 6475

Castle of Indolence, poem in Spenserian stanzas by James Thomson, 2102

Castle of Otranto, the novel by Horace Walpole, 2348

Castor, mythological character, 5983

Castor, star, position at different dates, 3351

Castor and Pollux, columns of temple, at Rome, 5507

Castor oil, adulteration, 2690

method of obtaining, 2690

plant, growing in America, 2683

in colour, 2687

throws out seed, 946

Cat, family of big and little, 416

ancient Egyptians trained the cat to catch birds, 427

Australian species' characteristics, 2391

first appearance, 1756

Gautier's story of the cat and the parrot, 779, 3746

how to care for your cat, 2483

how to draw a cat with the help of two coins, with picture, 996

sensible to high-pitched sounds, 6181

why does a cat fall on its feet? 4021

why its hair stands on end, 1434

Pictures of Cats

child with kitten, sculpture, 5133

head of domestic cat, 421

leopard, 424

Manx, 416

seven kittens in a row, 417

spotted, or dasyure, 2395

tiger, 416

tongue, under microscope, 1914

wild cat, of Scotland, 422

See also under specific names

Catcombs, ceilings and walls decorated by Early Christians, 444, 446, 448

pictures on walls, 445

portrait of Jesus, 445

Catalan, Spanish language, 5056

Catalonia, old province of Spain, in the extreme north-east of the peninsula, 5278

Catalysis, meaning of, 4472

Catamaran tree, winged seed, 947

Cat and the Parrot, story and picture. 779; in French, 3746

Cataract, opaqueness of lens of eye, 3664

what is cataract of the eye? 3649

Catbear: see Panda

Catbird, cry of, 3025

bird of Queensland, 3017

Catch-ball, game, 3596

Catchfly, plant, member of genus Silene, 6492

English species, flower, in colour, 4419

Catch the salmon, game, 3476

Catepillar, characteristics, 6199

hooks on foot, under microscope, 1916

of British butterflies, in colour, 6203

of British moths, in colour, facing 5935

of foreign moths, 6209

Caterpillar tractor, 3033

Cat-fish, 327

Cathedral, English, architecture, 5865

European, 5985

cathedrals in north of England, 215

cathedrals in south of England, 211

window for every day in the year at Salisbury Cathedral, 5871

See also under specific names

Cather, Willa Sibert, American writer, 4334

Catherine I, Empress of Russia, Peter the Great's wife, 5895

Catherine II, called The Great, Russian Tsarina, 4816

statesmanlike ability, 5895

driving through village, 5894

Catherine of Aragon, marriage to Arthur, eldest son of Henry VII, 1078

marriage to Henry VIII that caused dispute with the Pope, 1076

Catherine Parr, wife of Henry VIII, 1076

Catherine, St., story of, 6811

Marriage of St. Catherine, Borgognone's painting, 933

painting by Tintoretto, 940

Pinturicchio's picture, 822

Titian's painting, 939

Cathleen, Countess, story, 3249

Cathode ray tube, in radar, 2467, 2470

in television, 2344, 2346, 2467

magnet will bend rays, 2467

pictures, in radar, 2461, 2465, 2468-69

picture, in television, 2343

- Catholic emancipation** (1829), repeal of laws against civil rights of Roman Catholics, 1585
- Catiline**, conspiracy of, 4354
- Catmint**, flower, in colour, 4288
- Cato**, Marcus Porcius, called the Censor, Roman statesman and writer, 5428
- Carthage** denounced, 4353
- father of Roman history**, 5428
- portraits**, 4351, 5425
- Catrina**, book, R. L. Stevenson's sequel to *Kidnapped*, 3711
- Cat's-ear**, plant, 6493
- long-rooted**, flower, in colour, 5394
- Cat's eye**, mineral: see *Chrysoberyl*
- Cat's foot**, flower, in colour, 5642
- Cat's-tail**, grass, 3310
- Cattaro**, Yugoslav cathedral city and port on the Adriatic, view, 4562
- Cat, the Eagle, and the Sow**, fable with picture, 3885
- Cattle**, story of the family, 1151
- Argentina's great industry**, 7017
- Australia's millions**, 2446
- complaint caused by ergot**, 1698
- horns**, 1397
- Italy's production**, 4912
- New Zealand's millions**, 2698
- United States' millions**, 3680
- Pictures of Cattle**
all kinds of breeds, 1151-1160
bullocks at work in flooded rice fields in Burma, 1703
cows in field, 2307
drinking at stream in Australia, 2449
herd, 3153
Moorland Rovers, painting, by Peter Graham, 3656
See also under specific names
- Cattle egret**, bird, 3868
- Cattalus**, Caius, Roman poet, 5428
- See also *Poetry Index*
- Caucasus**, district between Black and Caspian Seas, 6014
- map**, in colour, 7091
- Caudine Forks**, battle, 4795
- Cauer**, Robert, *The Farewell*, sculpture by, 5256
- Cauliflower**, developed from wild cabbage, 2434
- picture**, 2437
- Cauliflower cloud**, 2870
- Causation**, meaning of, 4388
- Cauterets**, Pyrenees, street scene, 4178
- Cauterisation of wounds**, 2504
- Cavaignac**, General, tomb in Montmartre Cemetery, carved by Rude, 4648
- Cavaliere**, del: see *Del Cavaliere*
- Cavallo**, Tiberius, Neapolitan scientist, 20
- Cave bear**, of Pleistocene Age, 1881
- Cave-dweller anemone**, in colour, 1553
- Cavell**, Edith, story of, 6686
- Cave man**, life he led and pictures he drew, 181, 196, 587
- dwelling**, 187
- cinema proves drawings accurate**, 6703
- drawings**, near Almeria, 5280
- primitive drawings**, 192, 195, 198
- scratching a picture on bone**, 197
- Cavendish**, Henry, English electrician and chemist, 5327
- discovered hydrogen (in 1766)**, 19
- Earth weighed by (in 1798)**, 5243
- extracts nitric acid from the air**, 856
- Lavoisier's theories doubted by**, 6310
- dreaming of future**, 6311
- weighing the Earth**, 5242
- Cavendish**, Sir Thomas, English navigator, 1020
- Cave of Dogs**, carbon dioxide in cave kills dogs but not men, 1323
- Cavour**, Count Camillo, Sardinian statesman, 4787
- Cavy**, guinea-pigs derived from the group, 1036
- two varieties**, 1032
- Cawnpore**, city in the Indian United Provinces, massacre of, 2947
- Caxton**, William, English pioneer of printing, 365, 1516
- Henry VII watches him at work**, 960
- Pictures of Caxton**
Edward IV's visit to, 1513
pictures from his books, 1511
portrait, 1517
reading in the fields of Tenterden, 1510
- Cayenne pepper**, obtained from capsicum plant, 2804
- plant**, in colour, 2686
- Cayman**, crocodile group; characteristics, distribution and habits, 4491
- picture**, 4488
- Cayman Islands**, dependency of Jamaica, 3554
- Cazin**, Jean, French landscape painter, 2792
- Ceara rubber**, produced from manihot glaziovii tree, 2568
- Cecil**, Lord David, English writer, 3328
- Cecil**, William, Lord Burghley, English statesman, 1082, 2133
- portraits**, 1077, 2133
- Cecilia**, St., Donatello's sculpture, 4523
- painting by G. Moreau**, 2926
- sculpture attributed to Donatello**, 5256
- Van der Goes's picture**, 1053
- Cecilia**, the Sweet Singer, story, 6810
- Cecilian**, reptile, characteristics, 4748
- Cedar**, age of Lebanon trees, 6487
- different kinds**, 3789
- France gets from Lebanon**, 3491
- what are the cedars of Lebanon?** 3391
- Lebanon cedars**, 3393
- tree, leaves, and flowers**, 3546
- Ceilometer**, electronic light-recorder, 2717
- Celandine**: see *Lesser Celandine* and *Greater Celandine*
- Celebes**, Netherlands Indies, 5532
- maps**, 5541; in colour, 7097
- Celery**, vegetable, 2438
- Celestial crown**, in heraldry, 4986
- Celestine**, Pope, sends Roman missionaries to Britain, 2644
- Celia**, in Shakespeare's *As You Like It*, 6048
- with Rosalind in Forest of Arden**, 1103
- Cell** (biology), how it is made and how it lives, 827
- amoeba**, a single-celled animal, 827
- blood: see Blood cells**
- nerve: see Nerve-cell**
- of muscles**, 1810
- Robert Hook's discovery of**, 1883
- sponge composed of cells**, 917
- Cell**, colour: see *Pigment cell*
- Cell**, electric: see *Electric battery*
- Cellini**, Benvenuto, Italian sculptor and craftsman, 6360
- art as a goldsmith**, 6740
- Celluloid**, why does it catch fire so easily? 4894
- Cellulose**, artificial silk made from, 5364
- sea squirt's tunic of**, 5345
- what it is**, 81, 1292
- Celsius**, Anders, Swedish scientist who designed Centigrade thermometer, 5157
- Celsius thermometer: see Centigrade thermometer**
- Celts**, or *Kelts*, people of the round-headed Alpine type, art of enamelling known to ancient Celtic tribes, 6738
- discovery of two periods of their art**, 6997-98
- Saxons and Picts defeated**, in famous Hallelujah battle, 2644
- Switzerland's early inhabitants**, 4668
- setting out to drive off Teutons**, 2645
- Cenis**, Mont: see *Mont Cenis*
- Cennini**, Cennino, Florentine painter, 573
- Cenotaph**, Whitehall monument designed by Sir E. Lutyens, 314, 4281, 1704
- Censorship of the Press**, established and lapsed, 1517
- Census**, meaning of the word, 2042
- Centauro**, origin of, 1896
- Centaury**, what it is like, 4416, 4782
- dwarf tufted**, flower, in colour, 5644
- tufted**, flower, in colour, 5393
- Centigrade thermometer**, 4835
- Centipede**, animal, its poison and its phosphorescence, 5600
- English species**, 5599
- West Indian species**, 5599
- Central America**, early civilisations, 6996
- pictures**, 7009-15
- map**, general, 7030
- map**, in colour, 7103
- See also under names of countries
- Central Asia**: see under names of countries
- Centre of Gravity**, 5073
- See also *Gravitation*
- Centrifugal force**, what it means, 4517
- Centrifugal speedometer**, how it works, with pictures, 62
- Century: see measures of Time**, 7069
- Century plant: see Agave**
- Cephalopod**, octopus family, 5232
- Cephusdotus**, Athenian sculptor, 4270
- Ceramics: see Pottery and China ware**
- Cerberus**, three-headed dog, 5832, 6925
- Cerceris**, sand, insect, in colour, 5714
- Cereal**, the world's great cereals, 1697
- Dean Swift on growing of corn**, 1572
- India's areas greater than Canada's**, 2947
- northen limit of**, 221, 5908
- once used as money**, 5399
- origin**, 1435
- use discovered in Bronze Age**, 315
- See also specific names, Barley, Maize, Rice, Wheat, and so on
- Cerebellum**, part of brain, movements and balance of body controlled by, 2801: see also *Brain*
- Cerebrum**, part of brain, 2931
- See also *Brain*
- Ceres**, or *Demeter*, goddess of ancient Greece and Rome, 3516
- gift to Triptolemus**, 6819
- Ceramics: see Pottery and China ware**
- search for Proserpine**, 4362
- mourning Persephone**, sculpture, 4275
- Cerium**, in gas mantle, 3336
- Cerussite**, white lead ore, mineral, 1304
- Cervantes**, Miguel de, Spanish poet and writer, 3242, 5058
- portrait**, 3239
- working as a galley-slave**, 3243
- writes dedication of last book**, 5058
- Cetiosaurus**, fossil, 1507
- Cette**, French Mediterranean port, 4171
- Ceuta**, Moroccan town taken by Portuguese, 5398
- Cevennes**, French mountain range separating the Loire and Garonne basins from that of the Rhone, 4164
- Ceylon**, Dominion of, discovery and development, 2813
- ancient jungle cities**, 2813
- population**, 6005
- resources**, 6005
- Pictures of Ceylon**
Anuradhapura temple, 2816
- arms of the island**, in colour, 4985
- bamboos growing by riverside**, 2937
- Buddha and disciples**, rock images, 2816
- cinnamon plantation scenes**, 2805
- Colombo**, Hindu temple, 2816
- curious vegetation**, 2372
- elephant ploughing rice field**, 1703
- elephants in river**, 2025
- fishermen launching catamarans**, 2816
- flag**, in colour, 6967
- girl picking tea**, 2284
- girl tapping rubber**, 1170
- Kandy**, Temple of the Tooth, 2816
- King of Kandy deposed by British**, 2079
- modern tea factory**, 2286
- natives at rest**, 2816
- rubber tree**, 2565
- tree with roots above ground**, 2372
- map**, in colour, 7095
- Cézanne**, Paul, French painter, 3044
- portrait**, by himself, 3043
- The Gardener**, painting, 3041
- Chacma baboon**, 161
- Chad**, colony of French Equatorial Africa, 6750
- Chad Lake**, Africa, 3000
- Chadwick**, Sir Edwin, English social and poor law reformer, 5455
- watches children going to work**, 5453
- Chadwick**, Sir James, English scientist, Cosmic rays experiments, 6318
- Chadwick**, John White: see *Poetry Index*
- Chaerocampa celeris**, moth of India, caterpillar, in colour, 6210
- Chaetopterus**, marine worm, 6827
- Chaffinch**, bird, song and nest, 2901
- feeding habits**, 6855
- feeding its young**, 2892
- flock raided by sparrowhawk**, 3627
- in colour**, 2899
- route of migration**, 223

Chagall, Marc, French painter, 3048
Chahar, Chinese province, invaded by Japan, 6509
Chained book, in Priory Church, Great Malvern, 4863
 See also Bible
Chain measure: see Land Measure, 7069
Chain-stitch, how to make, with picture, 2488
Chair, pieces of iron on railways, 3948
 trick of chair that comes to you, 1994
Chair-o-plane, how to make toy, with picture, 4952
Chalcantite, sulphate of copper, 1302
Chalcedony, form of quartz, 768
 mineral, 1302
Chalcid flies, their work, 6452, 6461
Chaldea, architecture of ancient temples, 5376
 astronomers calculate intervals of eclipses, 817
 remains of ancient irrigation system found, 300
Chalfont St. Giles, Milton retires to this Buckinghamshire village during Great Plague, 4432
Milton's cottage, 4477
Chalgrove Field, early action in the Civil War, John Hampden mortally wounded, 528
Chalice, carved chalice of Ardagh, 3063
Chalk, animalcules form, 1836, 2248, 4856
 formation in southern England, 1633
 house on hilltop causes 4000 tons to be moved, 2526
 how did flint get into chalk? 4018
 how the stinging nettle uses it, 2660
 layer containing bands of flints, 2005
 map of strata in Britain, 1634
Chalkhill, John: see Poetry Index
Chalk hill blue butterfly, with egg, caterpillar, and chrysalis, in colour, 6206
Chalk milk-wort, flower, in colour, 5396
Challenger Expedition, amount of water in sea estimated, 560
Nares's Antarctic voyage, 6551
Chalmers, James, missionary, 1142, 1137
Châlons, battle of, 3931
Chalybite, carbonate of iron, 1304
Chamberlain, Neville, English statesman, 1830, 1941
Munich meeting with Hitler, 4553
 portrait, 1823
Chambers, Sir William, Somerset House in London designed by, 4228, 6471
Chambord, Chateau de, famous French chateau on the Loire, 6358, 6364
Chameleon, characteristics of, 4496
 northern limit in Spain, 5406
 why does it change colour? 564
 picture, 4493
Chamois, climbing powers, 1286, 1282
Chamomile, plant member of genus *Anthemis*, 6493
 species that grows in cornfields, 4542
 flowers, 5019; in colour, 4661, 4662, 4664
Champagne, French wine-growing district, 4169
Champaigne, Phillipe de, Flemish painter, his portrait of a girl, 3171
Chamignon, fungus, 3410
Champlain, Samuel de, French-Canadian explorer, 1020
 settlement founded in Canada, 2318
 surrendering Quebec to British, 2082
Champmol, French monastery that contains wonderful carvings by Claus Sluter, 4644
Champneys, Basil, architect, 6472
Champoiseau, discovered statue of Winged Victory, 6987
Champollion, J. F., survey of Egypt, 6860
Champs Elysées, Paris, 4165
Chancellor, Richard, English navigator, 776, 4800
Chancellor of the Exchequer, Minister of Finance, 4537, 4538
Chancery, its work, 4774
Chandernagore, French trading station in India, 2945
Changchun, town of Manchuria, formerly called Hsinking, 6511-12

Channel Islands: see Jersey; Guernsey; Alderney
Chantarelle, edible fungus, 3411
Chanticleer, who is he? 6232
Chantrey, Francis, English sculptor, 4767
Chanute, Octave, American pioneer of the aeroplane, 22
Char, fish, of Salmon family, 4982, 5197
Charabanc, early type, 4318
Character, climate's effect on, 2617
 emotions make our character, 4279
 its importance, 2854
 marks on face tell our character, 1430
Characters from the World of Story, in colour, 402
Charades, 2234, 2360
Charcoal, ironmasters of early Britain used it, 49
Charcoal Burner's Hut, The, Rousseau's painting, 2790
Charcot, Dr. Jean, Antarctic explorer, 6556
Chardon, Francine, his painting, Sleeping Child, 1483
Chardin, Jean Baptiste, French painter, 1890
 his painting, Grace, 1683
 portrait, 1680
Chardonnet, Hilaire de: see De Chardonnet
Chares, Greek sculptor, a native of Lindus, Rhodes, 4403, 4884
Chares, King, famous statue in British Museum, 4026
Charing Cross, copy of cross erected by Edward I to Queen Eleanor, 952, 5873
Charing Cross Railway Bridge, ugliest thing in London, 6346
Chariot in the Mud, story, 3014
Chariot race, in ancient Rome, 1907
Charites, Greek name for the Graces, goddess of beauty, 3517
 See also Graces
Charity, beauty of true charity, 4337
 del Sarto's group in Louvre, 820
 figure in Rouen Cathedral, 4656
 painting by Abbot Thayer, 3289
 sculpture by Bartolini, 5012
 sculpture by Thorwaldsen, 5257
Charlemagne, great Frankish king, soldier, and statesman, 2521
 Alcuin's letter to Charlemagne on studies of his pupils, 2522
 Alcuin's school at Aix-la-Chapelle, 4956
 army saved by carline thistle, 5622
 caused Saxons to be baptised, 2524
 Christianity upheld by, 4292
 crowned emperor by Pope in Rome, 2522, 2524, 4784
 legends of Charlemagne, 6817

Pictures of Charlemagne
 addressing Rhine chiefs, 2523
 anointed King of Franks, 2521
 coronation by Pope Leo, 2523
 patron of literature and science, 2523
 portrait, 3917
 portrait by Dürer, 2522
 with young scholars, 2523
Charleroi, Belgian iron-founding centre in the Sambre coalfield, 5650
Charles I, king of England, struggle with Parliament, 521, 1206, 4008
 democracy hated by him, 4006
 statue by Le Sueur, 1208
 Van Dyck's fine portraits, 521, 1422

Pictures of Charles I
 burial at Windsor Castle, 1209
 death warrant, 4863
 Harvey explaining blood circulation to Charles I, 2507
 his children, 1421
 last few moments, 1209
 mocked by soldiers at trial, 1205
 portrait by Van Dyck, 524
 portrait, with parents, 4131
 sees his children before his trial, 1207
 walking to execution, 1209
 window in Whitehall, 4864
Charles II, king of England, 1210
 acquires Bombay from Portugal, 2945
 cured by quinine, 2684
 England's ignominy, 4008
Habes Corpus Act, passed, 1214
 Union Flag re-established under, 6662
 visits Wren at St. Paul's, 4225

Charles IV, king of Bohemia, European reputation, 4552
Charles VI, king of France, Henry V married his daughter, 3920
Charles VII, king of France, Joan of Arc causes him to be crowned at Rheims, 2282
 coronation at Rheims, 2257
Charles V, king of Spain and Holy Roman Emperor, 4293, 4545
 Netherlands pass to Holy Roman Emperor, 5527
 Spain's greatest king, 5274
 Titian visits him, 6678
 arms, in colour, 4992
 Erasmus teaching him, 4957
 picks up Titian's brush, 281
 portrait, by Titian, 3657
 surrender of Francis I, 3919
Charles XII, Swedish soldier king, 5148
 Peter the Great defeats him, 5895
Charles the Bold, duke of Burgundy, 5527
 de Comines ill-treated by him, 4454
Charles the Great: see Charlemagne
Charles Island tortoise, 4488
Charleton, Robert, story of, 5829
Charlock, plant, insect pests, 3177
 mustard obtained from, 2808
 vitality of seeds, 3180
 what it is like, 4543
 flower, 4540
Charms, used in old-time medicine, 2502
Charnwood Forest, Leicestershire, description, 468
 island in a former sea, 1384
Charon, mythological ferryman of the dead, 3532, 6929
Chart, fish, in colour, facing 5197
Chart, ships' charts, 3577
Charter, of Labour, 6487
 of the United Nations, 6477
 what is a charter? 5386
Charter, Great: see Great Charter
Charterhouse School, arms, in colour, 4489

Chartran, Theobald, his paintings
 Louis IX at his lessons, 2258
 René Laennec treating patient, 2503
Chartres Cathedral, architecture, 5988
 ambulatory, 5987
 south entrance, 5987
 west front, 5999
Charybdis, famous whirlpool in the Strait of Messina, 6104
 origin of the whirlpool, 3529
 story in the Odyssey, 5308
Chase, William Merritt, American painter, 3288
Chassis, of motor-car, diagram, 4320-21
 being assembled, 3764
Chateaubriand, François, Vicomte de, French philosophic writer, 4456
Chatham, Earl of: see Pitt, William
Chat Moss, morass crossed by Liverpool and Manchester Railway, 2755
Chatsworth House, Grinling Gibbons's work at, 6732, 6251
Chatterer, Pompadour, in colour, 3141
Chatterer, red, in colour, 3263
Chatterton, Thomas, his death, 2101
Chaucer, Geoffrey, English poet, 363, 5801
 Caxton printed his works, 1516
 Christianity of Middle Ages pictured by, 3508
 how to read Chaucer, 364
 modernised by Dryden, 1610
 self-description, 366
 writings add to our knowledge of reign of Edward III, 954

Pictures of Chaucer
 Chaucer at the King's Court, 367
 on horseback, 366
 pointing to friend's poem, 363
 statue in Park Lane, London, 4477
 See also Poetry Index
Chaudet, Antoine, French sculptor, who made classic statue of Napoleon, 4647
 Cupid and the Butterfly, 4651
 Oedipus and Shepherd, 4898
Checa, U., picture of Huns, 2153
Cheddar, village in Somerset, 2309, 1712
Chedorlaomer, king of the Elamites, 6798

- Cheer, Boys, Cheer**, popular song in the Crimean war, 1284
- Cheerfulness**, importance of, 3462
- Cheese**, beef half as nourishing, 2309
- British Empire's production**, 2074
- Gorgonzola** improved by fungus, 1440
- microbes** in its manufacture, 698, 2309
- why bread should be eaten with**, 2428
- Cheetah**, characteristics, 419, 424
- how fast can it run?** 6852
- Cheklov**, Anton Pavlovitch, Russian writer, 4819
- portrait**, 4815
- Chekkiang**, Chinese Province, 6500, 6502
- Cheliabinsk**, Russia, iron industry, 6023
- Chelmonski**, Polish painter, 5029
- Chelmsford**, capital of Essex; arms, in colour, 4990
- Chelone**, nymph changed into tortoise, 4964
- Chelsea china**, its manufacture, 6738
- Chelsea Hospital**, designed by Wren, 4227, 6239
- Cheltenham College**, arms, in colour, 4989
- Chemical**, description of chemicals, 4469
- disease**, attacked with, 4471
- Chemist**, why do chemists have coloured bottles in windows? 5737
- electronics** in chemical analysis, 2718
- hydrogen ions** and their uses, 2718
- at work** in laboratory, 4469
- Chemistry**, world importance, 4469
- compounds** and their formation, 4345
- how to make simple experiments**, 6424
- can chemistry build up life?** 6854
- Chemulpo**, Korean port, 6624
- Chenonceaux**, Chateau de, interesting French country house, 6358, 6369
- Cheops**, or Khufu, Great Pyramid built by, 4884, 5379, 6876
- Chephren of the Fourth Dynasty**, Sphinx carved during his reign, 6868
- Chepstow**, port near the mouth of the Wye, in Monmouthshire, castle, 961
- Cheque**, what it is, 5392
- Chequered skipper butterfly**, with egg, caterpillar and chrysalis, 6208
- Cherbourg**, French naval arsenal on the English Channel, 4717
- Cerith**, brook by which Elijah stayed, 2481, 3469
- Cherokee**, Sequoya's alphabet for Indian tribe, 5459
- Cherra Punji**, its rainfall, 5964
- Cherry**, Andrew, Irish actor and writer of songs, 1264, 1261
- Cherry**, family, 4039, 4284, 6492
- seeds** sown by birds, 949
- what the wild cherry is like**, 4284, 4414
- why has a cherry a stone inside?** 8164
- fine bunch** of fruit, 1816
- flower** of wild variety, in colour, 4285
- fruit**, in colour, 3667
- wild tree** with flowers and leaves, 4158
- Cherry gall**, see Oak-apple
- Cherry-Garrard**, Apsley, English Antarctic explorer, 6560
- Chesapeake Bay**, deep inlet in the east coast of America, Henry Hudson explores, 5212
- Chesapeake**, U.S. frigate, its flag, 4861
- Cheseman**, Robert, by Holbein, 1191
- Cheshire**, Western county of England, 215
- places** in, 7154
- road map**, 7147
- salt mine** at Winsford, 1545
- Chesney**, General, his survey of Iraq, 6868
- Chess**, how to play chess, 1119
- Chess Players**, painting by Eakins, 3296
- Chess apples**, fruit of whitebeam, 4038
- Chessboard**, ivory, from Florence, 74
- Chessylite**, carbonate of copper, 1303
- Chest** (anatomy), 1196
- Chester**, capital of Cheshire, 857
- cathedral**, its architecture, 5874
- arms**, in colour, 4990
- famous "Rows"**, 1834
- view** of cathedral from south-east, 5877
- Chesterfield**, Lord, Samuel Johnson's letter to, 1976
- Chesterfield**, industrial town in Derbyshire, parish church with twisted spire, 1836
- Chesterton**, Gilbert Keith, English writer and poet, 2972, 3714, 3831
- portrait**, 3711
- See also Poetry Index**
- Chestnut**, fruit, in colour, 3669, 3672
- with leaves** and flowers, 3551, 4151
- Chestnut-backed babbler**, in colour, 3141
- Chest of Caller Pit**, legend, 1149
- Cheviot Hills**, range between Scotland and England, 461
- Chevrotain**, animal, 1404
- Chevy Chase**, Douglas Standard, in colour, 6968
- Cheyne Walk**, Chelsea, 1220
- Chiang Kai-shek**, Chinese president 6504, 6509, 6510, 6512
- Chibchas**, ancient Colombian people, 7002
- Chicago**, second city of the United States, 3677
- Pictures of Chicago**
- Eugene Field monument**, 1091
- Grant's monument**, 3689
- La Salle-Wacker office building**, 3675
- Shakespeare statue**, 4477
- State Street**, 3804
- street scene**, 3802
- Chichester**, city in West Sussex, Norman work in cathedral, 5866
- St. Mary's Hospital** and its origin, 6240
- arms**, in colour, 4990
- Bishop Storey's Cross**, 1594
- cathedral**, 1594
- Chichester Canal**, painting by J. M. W. Turner, 2419
- Chickari**, red squirrel of America, 1030
- Chickweed**, relation of stitchwort, 4290
- Chickweed wintergreen**, 4782
- Chicory**, Belgium produces, 5646
- coffee adulterated with**, 2443, 4414
- relation** of endive, 2434
- flower**, in colour, 4418
- Chiddingstone**, Kent, Tudor houses, 1088
- Chiff-Chaff**, bird, in colour, 2768
- Chiffre d'Amour**, Fragonard's fine painting in Wallace Collection, 1689
- Chilblains**, what causes chilblains? 3651
- Child, England's real wealth**, 3271
- Adoption of Children Act** (1926), 6254
- bones** gristly to allow for growth, 1567
- cream** should be given to them, 2308
- education** compulsory, 6254
- family allowance**, 6256
- feeding** wisely of vital importance, 2184
- first introduced** into sculpture by Boethus of Carthage, 4403
- food** needed in larger quantity than by grown-ups, 2184
- Guardianship of Infants Act** (1925), 6254
- International Labour Organisation's laws** which protect children, 4903
- meat** not very good for, 2559
- Nursery and Child Minders Regulation Act** (1948), 6254
- oatmeal** and milk an ideal food, 2430
- protection** under State, 6254
- salts** of lime needed, 2184
- sleep** should be allowed until natural waking, 1549, 2044
- sugar** should never be forbidden, 2183
- United Nations Appeal** for, 6486
- water** should be taken in plentiful supply, 2182
- why** are some things good for grown-ups and not for children? 2787
- will children** rule the world? 2919
- children** in school, 6099
- Mother Nature** and her children, 43
- reading** a book, 80
- See also Child Labour, Children's Act**, and so on
- Childe Harold's Pilgrimage**, poem that made Byron famous, 2596
- Childhood**, the sculpture by Donatello, 4897
- Child Labour**, the terrible blot on England's history, 4903
- cotton industry's sordid chapter**, 172, 244
- restricted** in 19th century, 1582
- Children of the Sky**, story, 6813
- Children's Act**, alcohol restrictions under, 4903
- work** accomplished by, 4903
- Children's Act** (1948), 6253
- Child Roland** to the Dark Tower Came, story, 2514
- Child's Good Things**, in colour, 5
- Child Trusted with State Secrets**, story, 5706
- Child Who Came by Night**, story and picture, 4971
- Chile**, Republic of South America, 7018
- Spanish conquest**, 7000
- flags**, in colour, 6972
- pictures**, 7014
- Maps of Chile**
- animal life** of the country, 7028-29
- general** and political, 7023
- in colour**, 7104
- physical features**, 7024-25
- plant life**, 7026-27
- Chilean sea-eagle**, 3627
- Chillon**, settled in Moab, 1617
- Chillies**, obtained from same plant as cayenne pepper, 2804
- Chillingham cattle**, characteristics, 1152
- Chiltern Hills**, range of chalk hills in Oxfordshire, Buckinghamshire, Bedfordshire, and Hertfordshire, 468
- view** of Ivinghoe Beacon, 471
- Chiltern Hundreds**, what are they? 5244
- Chimera**, slain by Bellerophon, 6821
- Chimney**, open chimneys help to keep the room fresh, 1323
- what** to do if a chimney catches fire, 6668
- why** smoke goes up, with picture, 4999
- Wonder Questions**
- why** are some chimneys pots bent? 4268
- why** does a chimney smoke? 4998
- why** has a factory a tall chimney? 1796
- why** has a factory chimney a rim round the top? 5864
- why** must a big chimney have such a broad base? 5494
- Chimpanzee**, home and character, 160
- pictures**, 163-64
- China**, great Asiatic Republic, general description, 6499
- ancient history** revealed by excavation, 6995
- Buddhism** in India and China compared, 2032
- coal deposits**, 2833
- commercial future** predicted for, 2032
- communications**, 6599
- communists** and, 6510, 6512
- currency** reform, 6509
- early civilisation**, 6503, 6995
- education**, 6504
- Great Wall** of China, 5628, 6503
- invaded** by Japan, 6509
- maritime customs**, 6509
- meaning** of Chinese words, 6501
- mineral deposits**, 6502
- paper** first made, 1291, 1439
- people**: see Chinese
- post offices** found by Marco Polo, 4626
- rice** cultivation, methods, 1700
- stories** in Chinese school books, 3014, 4854
- stories** of Chinese boys, 5707
- teaching** of Confucius, 2032
- bamboo forest** near Nankin, 2936
- boy** of China, 89
- children** at school, 2041
- cormorants** used for fishing, 6508
- Faux-Namiti bridge**, on the Yunnan railway, 552
- flags**, in colour, 6972
- Great Wall**, 6506
- lady**, 6508
- Ming Tombs** arches, 5635
- pagodas** and temples, 5082
- people** and scenes, 6498-9, 6505, 6515
- railway** engine, 3511
- rice-fields** on hills, 1699
- Shanghai**, scene in, 6507
- Maps of China**
- general** and political, 6520
- in colour**, 7096
- natural features**, 6519
- See also Chinese; Chinese Empire**
- China (ware)**, story of making, 801
- Japan's art**, 6623
- kinds** made in many countries, 6737
- non-conductor** of electricity, 236
- Wedgwood's influence** on industry, 302
- what** are the brown specks in china? 1922

Chinese goddess, 75
 willow-pattern plate, 35
 See also China clay and Pottery
China cinnamon: see Cassia
China clay, where obtained and how prepared, 301
 drying, kneading, and clay pits, 303
China grass: see Ramie
"China's Sorrow": see Hwangho
Chinchilla, fur valuable, 1036, 1033
Chindwin River, Burma, 2814
 timber raft on, 2817
Chinese, biggest nation of the world, 2041
 early navigators crossed the Pacific to America, 1014
 enamel art, 6738
 honesty, 2032
 invention of compass, 106
 literature, 5674
 philosophers, 5080
 porcelain manufacture, 6737
 religion, 2032
 See also China
Chinese album, how to make, 3723
Chinese architecture, 5628, 5635
Chinese dictionary, by R. Morrison, 1138
Chinese Empire, description, 6499
Chinese lantern, how to make, with diagram, 6669
Chinese railways puzzle, 2611, 2731
Chinese Turkestan, archaeological discoveries in, 6995
 caravan routes from China to Tibet, 6503
 See also Sinkiang
Chinese windlass, 6349
Chinghai, Chinese province, 6500
Chinking, town of China, 6501
Chinnampo, Korean port, 6624
Chintreuil, Antoine, French landscape painter, 2790
 his painting, Space, 2789
Chios, island in the Aegean Sea, birth-place of great sculptors, 4026
Chipmunk, habits and hibernation, 1030
 four-banded, 1031
Chippendale, Thomas, English furniture maker, 3860
 style of furniture developed by, 6737
 talking to Sir Joshua Reynolds, 3861
Chippendale furniture, chair, 6735
Chital deer, 1402, 1403
Chitin, insects' and crabs' armour, 5473
Chitin Shell, 6580
Chittagong, port of India, 2810
Chiuri, formerly Etruscan capital of Clusium, 6994
Chivalry, in the Middle Ages, 3505
 The Vigil, painting by John Pettie, 3505
Chlorine, an element, 4222
 composition of the gas, 4347
 its use in First World War, 1539
 in salt, 483, 1539
Chloroform, discovered by two chemists (in 1831), 2508
 effect on brain cells, 828
 prepared from methane, 4348
 Simpson first tested, 2508, 2503
 why does chloroform send us to sleep? 6840
Chlorophyll, plant uses it to get food, 201
 what is it, and where found, 81, 82, 5000
Chocolate, what chocolate is made from, 1438, 2316
 founding of three great firms, 4108
Choke-damp, in mines, 2837, 3332
Choking fit, how it happens and how to stop it, 1320
Cholera, germs discovered by Koch, 2624
 microbes, 577
 Uno and, 6487
Cholon, town of Indo-China, 6513
Chondrodite, mineral, 1303
Chopin, Frédéric, Polish composer, 148, 5028; portrait, 5029
Choragic Monument, famous monument of Lysicrates at Athens, 5500
 view of ruins, 3464
Chorda, thread-like, seaweed, 3416
Chordaria, whip-shaped, seaweed, 3414
Chorzow, town of Poland, 5032
Chosen: see Korea
Chough, bird, characteristics, 2770
 in colour, 3021
Chough-thrush, characteristics, 2771

Chousingha, antelope of India, 1400
Chow-chow, dog, related to wolf, 669
 white, 667
Chrim, or anointing oil, preparation of
 balm of Gilead, 2938
Christ: see Jesus Christ
Christchurch, city and port of South Island, New Zealand, 2696
 cathedral, 2704
 River Avon scene, 2704
Christ Church, Newgate Street, built by Wren, 6238
Christ Church Cathedral, Oxford, interior, 5877; exterior, 5881
Christ Church College, Oxford, arms, in colour, 4988
Christian, in Pilgrim's Progress, 6781
Christianity: see Christianity
Christian art, architecture, 5739
 decoration of the catacombs, 443, 446
Christian Era, how and why the date was fixed, 2295
Christian Hero, The, prose work by Steele, 1731
Christiania: see Oslo
Christianity, 5557, 6915, 7049
 Antioch, a centre of, 6297
 Aristotle's influence on, 1288
 Charles Martel's triumph for, 2521
 Constantine favoured it, 2883
 disciples of Jesus said to have preached Gospel in India, 2944
 early teaching, 1906
 Greek and Roman churches, 1908
 influence in Rome, 1905
 influence on French song, 4453
 in Germany in early times 1907
 in Ireland's early days, 596, 3064
 life of Christians in the Dark Ages, 1908
 Mohammedanism has much in common with, 2282
 Mohammedan wars against, 1908
 origin of name Christian, 6417
 persecution of the Christians, 1906, 2877, 2881, 6916, 6922
 Plato's influence, 1228
 rise in British Isles, 594, 596, 2400, 2646, 2776, 6918
 rise under Constantine, 446
 spread of, 3346, 6171, 6537, 6915
 struggle for uniformity, 7053
 what it teaches, 1906, 4089
 when was Christianity introduced into England? 5004
 Apostles setting out to preach, 6171
 early Christians at prayer, 6417
 meeting of Christians in Rome, 1905
Christiansborg Castle, Danish fort in the Gold Coast, 3323
Christmas Island, Singapore dependency in Indian Ocean, 3423
 land crab pests, 5476
Christmas rose, origin of, 5268
Christmas tree, how to make with paper, and diagram, 6669
Christopher, St., legend, 6810
Christ's College, Cambridge, arms, in colour, 4988
Christ's Hospital, founded by Edward VI, 6844
 arms, in colour, 4989
Chronicle of Kiev, The, 12th-century Russian Chronicle, 4815
Chronometer, John Harrison invents, 3738
 ship's chronometer, 3576
Chrometric speedometer, how it works, with pictures, 63
Chronopher, Greenwich time transmitter, 1473
Chronos: see Saturn
Chrysalis, transformation into perfect insect, 6199, 6202
 of British butterflies, in colour, 6203-08
Chrysanthemum, plant, derivation of name, 6497
 genus of order Compositae, 6493
 how to make paper ones, 5813
 various species, 6381-2
Chrysanthemum-Old-Man, story, 3496
Chrysanthemum, The, story, 4734
Chryselephantine, method of sculpture, used by Ancient Greeks, 4142
Chrysoberyl, cat's eye, mineral, 1304
Chrysocolia, silicate of copper, 1302
Chrysoprase, mineral, 1301
Chrysostom, St., his life story, 6811

Chrysomenia, rosy, seaweed, 3414
Chub, fish of Carp family, food of, 4979
 picture, in colour, facing 5197
Chulain, or Cuchulain, stories of, 1276, 5469, 5585
Chungking, Chinese town, 6501, 6509
 street of steps, 6515
Church, Frederick Edwin, American landscape painter, 3287
 his painting, The Parthenon, 3291
Church, Richard, English poet and writer, 4034
Church (building), Basilican churches of the early Christians, 443, 5739
 beautiful French churches, 5989
 building permitted by Constantine, 446
 court jester founds a church, 5866
 German buildings, 5991
 Gothic architecture, 449, 5865
 London churches, 5875, 6469
 modern churches in Gothic style, 6472
 mosaic work in early churches, 446
 Norman churches in England, 449, 5865
 Renaissance churches in Italy, 6110-14
 Romanesque style, 449, 5744
 St. Peter's, Rome, the largest in the world, 5994, 6112
 Saxon churches of Early England, 5865
 Spanish, influence of Moors, 5994
 Wren's London churches, 6243
 why are official notices hung at church doors? 5620
 See also Cathedral; Architecture
Church (organisation), fairs in early England under, 3882
 feudalism's bad effect, 3508
 Gregory's fine reforms, 2278
 miracle plays fostered by, 857
 power in fifth century, 2280
Churchill, John: see Marlborough, Duke of
Churchill, Winston, American historical novelist, 4335
Churchill, Winston, English statesman, 1941, 3827, 6478; portrait, 2133
Churchyard, why are there so many yew trees in churchyards? 5491
Cylocadia, seaweed, 3415-16
Cibber, Colley: see Poetry Index
Cicada, insect, life-story, of 5720
 English species, 5721
 growth of larva in American, 5709
Cicely, sweet, flower, in colour, 5642
Cicero, Marcus Tullius, Roman philosopher and statesman, 4354, 5428
 death, 4354
 portraits, 4351, 5425
 speaking in Roman senate, 4349
Cid, The, Spanish national hero, 5410
 story of romantic knight told in 203 ballads, 5056
Cigar, manufacture in Holland, 5531
Cilia, what they are, 3412
 dirt and dust kept out of lungs by, 1321
Ciliated heath, what it is like, and where it grows, 5019
 flower, in colour, 5143
Cimabue, Giovanni, famous Florentine painter, 4715
 pictures attributed to Duccio, 568
 Pictures
Cimabue decorating church walls, 4717
 discovery of Giotto, 4719
 mosaic designed by, 6736
 painting of Betrayal by Judas, 572
 portrait, 4715
 talking with Giotto, 4717
Cima da Conegliano, follower of Giovanni Bellini, 932
Cinchona, of Bedstraw family, 2683
 grown in Java, 5532
 introduction into India, 2684
 medicinal properties, 2684
 tree, 2691
Cinnamatus, Lucius Quinctius, Roman legendary hero, 4350
Cinderella, story with picture, 1761
Cinema, or cinematograph story of, 6703
 perforation of films, 4752
 photo-cell, use in films, 2340
 how are film cartoons made? 3165, 6711
 how talking films are made and projected, 6716-17
 pictures of the industry, 6705-17
 sound recording room of a studio, 6703

- Cinereous vulture**, 3636
Cinnabar, sulphide of mercury, 1302
Cinnabar moth, and caterpillar, in colour, facing 5935
Cinnamon, tree of Laurel family, 2807
 how the spice is obtained, 2807
 bark laid out to dry in sun, 2805
 cutting down branches in Ceylon, 2805
 peeling the branches, 2805
 plant, in colour, 2686
Cinnamon teal, bird, in colour, 3144
Cinquefoil, of genus *Potentilla*, 4892
 flowers, 4287, 4420, 5891, 6128
 heraldic charge, 928
Cinque Ports, flag, in colour, 6966
Cintra, Portuguese health resort, near Lisbon, castle of Pena, 5403
Cipangu, Marco Polo's name for Japan, 6618
Circassians, Caucasian people, conquest by Russians, 5898
Circe, mythological goddess, 3529
 story in the *Odyssey*, 5306
 painting by Sir E. Burne-Jones, 3527
Circle, can we square a circle? 4265
 how to find dimensions of, 7075
Circled archer beetle, in colour, 6335
Circuit, electric, closed and open, 855
Circuit, in law, explained, 4775
Circular measure, 7069
Circular saw, 6352
Circulation of the Blood, time occupied in various animals: see *Blood*
Circumlocution, Dickens's name for tortuous officialdom, 2848
Cirencester, market town in Gloucestershire, mosaic paving there dates from Roman occupation, 6732
 old Guildhall, 6240
Cirl bunting, bird, in colour, 3021
Cirro-cumulus, clouds, 2872
Cirro-cumulus lenticular, clouds, 2872
Cirro-stratus, cloud, 2871
Cirrus, cloud, what it is, 2921
 picture, 2870
 See also *Cloud*
Ciseri, Antonio, painting of *Ecce Homo* by, 4705
Citheronia regalis, moth of Brazil, caterpillar, in colour, 6209
Citizen, derivation of word, 4407
Citizen of the World, essays by Oliver Goldsmith, 1980
Citron, fruit, 1813
 use of, 1814
City, what is the freedom of a city? 5987
City of London School, arms, in colour, 4989
City of the Heavens, Tycho Brahe's observatory, 3492
City of the Sun, book by Tommaso Campanella, Italian philosopher, 4583
Civet, animal, habits, 420
 African and binturong, 424
Civil Aviation, ensign, in colour, 6968
Civilisation, ancient Egyptian, 426
 Cretan, 795
 development, 10
 Elamites believed to be the first civilised people, 6859
 faith of men in each other as basis, 1109
 Greek, 674, 1163, 1290
 Gregory set it on a new road, 2280
 hate holds back, 2282
 horse's part in, 1896
 life would not be easier if we went back to Nature, 2601
 man has to choose between its call and that of the wild, 298
 moral law prevents its falling to pieces, 496, 619, 797
 peace essential to, 797
 Rome's decay caused withering of, 1538
 slavery basis of ancient, 428
 the earliest civilisations, 6859
 wolf at war with, 538
 why is a white man more civilised than a black man? 6729
Civil Service, what it is, 4539
 sense of duty which inspires, 2352
Civil War, in England, began at Nottingham, 522, 6808
 in Roman Empire, 2881
 See also *American Civil War*
Cladophora, straight, seaweed, 3413
Clam, giant, shells used as baths, 6582
Clamp shell, 6580
Clanethus, silk-moth of California, caterpillar, in colour, 6209
Clapperton, Hugh, Scottish African explorer, 3000, 2997
Clare, John, called the Northamptonshire Peasant Poet, 3954
 portrait, 3953
 See also *Poetry Index*
Clare College, Cambridge, arms, in colour, 4988
Clarendon, Earl of: see *Hyde*, Edward
Clarion, heraldic charge, 926
Clarissa Harlowe, novel by Samuel Richardson, 2347
Clarke, Marcus, Australian novelist, 4336
Clarkson, Thomas, English anti-slavery leader, 3244
Classical architecture, revival of this style in nineteenth century, 6605
Claudel, Paul, French writer and poet, 4458
Claudia, British lady in the Bible known to Paul, 60, 2400
Claudian Aqueduct, The, painting by Corot in the National Gallery, 2791
Claudio, in Shakespeare's *Measure for Measure*, 6050
Claudio, in Shakespeare's *Much Ado About Nothing*, 6046
Claudius, in Shakespeare's *Hamlet*, 6163
Claudius I, Roman emperor, 2400, 2876
 Caractacus brought before, 2397
 portraits, 1667, 2878
Claudius II, Roman emperor, 2879
Claudius, Matthias: see *Poetry Index*
Clausen, Sir George, English painter, 2878, 2928
 Bird-scaring in March, painting, 2676
 Gossip on the Road, painting, 2671
Clavelina, a sea squirt, 5346
Claviger beetle, characteristics, 6331
Clay, used in brick-making, picture-story, 1789-92
 granite mountains have become, 301
 lead pencil made of graphite and, 2039
 man first makes use of, 298
 puddle, used to line canals, 4865
 weight of a cubic foot, 7074
 writing tablets made by the Babylonians, 2034
 polished nodule with lime cracks, 2007
 See also *Brick*; *China clay*
Clay, Maud Hogarth, *Horses in Harvest* Field, painting by, 1893
Clayton, John, fine stained-glass windows designed by, 6731
Cleaning, best way to clean things, 256
Cleavers: see *Goose grass*
Cleg, insect: see *Great gadfly*
Clematis, genus of order Ranunculaceae 6280, 6491
 flowers of two species, 6378
Clemens, Samuel Langhorne: see *Twain*, Mark
Clement VII, Pope, flight (in 1527) during sack of Rome, 6112
 Michael Angelo works for, 6185
Cleopatra, Egyptian queen, 6878
 death of, painting by John Collier, 427
Cleopatra's Needle, place in ancient Egyptian architecture, 5380, 6876
 in London, 685, 1218
Clepsydra, early form of clock, 2297
Clerac, M., experiments with microphone, 1844
Clerk Maxwell, James: see *Maxwell*
Clermont-Ferrand, city of Auvergne, France, Peter the Hermit at, 3268
Cleveland, American port on Lake Erie, in Ohio, public square, 3803
Cleveland, Duchess of, portrait by Sir Peter Lely, 1927
Cleveland Hills, Yorkshire, view, 471
Clever Dog, The, story, 4366
Click-beetle, characteristics and larval stage as wireworm, 6332
 See also *Wireworm*
Clifden Blue butterfly, with egg, caterpillar and chrysalis, in colour, 6206
Clifden nonpareil moth, and caterpillar, in colour, facing 5935
Cliffs, cathedral cliffs on coast of Achill Island, 2006
 Seven Sisters, Sussex, 209
Cliff Swallow, bird, in colour, 3143
Clifton College, arms, in colour, 4989
Clifton Suspension Bridge, 548
Climate, what it is, 2617
 art influenced by, 2301
 Carboniferous Age, 1260
 cold is better withstood than heat, 2029
 Continental Drift, what it is, 3037
Ice Age changes, 168
 industry influenced by, 2622
 is the British climate a good one? 5863
 men and nations influenced by, 2621
 relation to weather, 2617
 trade winds, 2620
Climbing perch, moisture in gills, 4857
Climb Up the Capitol Hill, story, 5468
Clio, mythological Muse of history, 3517
Clive, Robert, English general and statesman, 1328, 2946
 supported by Home Government, 4126
Cloak anemone, in colour, 1555
Clock, history of, 2297
 age of some clocks, 6332
 electrically-driven, 6831
 how a watch works, with pictures, 6336
 how to tell the time, 5439
 Huygens's self-regulating, 3613
 Paris manufacture, 4170
TIM, speaking clock, 3168
 worked by electricity, 974
 why has an old clock four minute spaces instead of five? 1415
 Big Ben, how it works, 6831, 6833
 making clocks in a factory, 6835
 pendulum clock at Greenwich, 6834
 picture-history, 2297
 synchro-mechanism system, 975
Clodion, Claude Michel, French sculptor, 4646
Cloister and the Hearth, The, novel by Charles Reade, 3582
Clondalkin, Ireland, Round Tower, 3060
Cloth, Flemings taught us manufacture of, 3384
 manufacture, 809-11
Clothes, how to darn and patch, with pictures, 2983
Clothes moth, life-story, 4393
Clothes-pegs, how to make dolls from clothes-pegs, with picture, 2609
 how to make fighting clothes-pegs, and picture, 4217
Clothing, ancient Egyptians' use of wool, 427
 coolness of woollen, 800
 how to clean stained, 256
 man's first adoption in winter, 167
 plants that provide, 1438, 2561
 tight clothing an enemy to healthy breathing, 1317, 1321
 warmth of woollen explained, 800
Wonder Questions
 why do we wear light things in summer and dark in winter? 2920
 why is tight clothing bad for us? 6101
Clotho, one of the Fates, 3517, 6937
Cloud, as matter, 4098
 atlas of, 2921
 dry ice dropped upon to produce rain, 3395
 electric power of, 238
 formation and types of, 2866
 types named and described, 2921
Wonder Questions
 are clouds part of the Earth? 2043
 are new ones always being made? 5001
 can gravitation pull a cloud down? 4394
 does a cloud weigh anything? 4762
 how do clouds stop sunlight? 2174
 how does a soft cloud make a noise when it thunders? 310
 how is it that clouds have regular shapes? 2921
 what is it like above the clouds? 5123
 where are they when the sky is clear? 5367
 which side of the cloud is the thunder on? 1183
 why does it fall as rain? 4016
 why has a cloud a silver lining? 4518
 pictures of clouds, series, 2869-72
 warm clouds that bring monsoon, 2743
Cloud, The, painting by Lawson, 2546
Cloudberry, the picture to poem, 4567
Cloudberry, genus *Rubus*, 6492
 wild fruit, in colour, 3665

Clouded leopard, tree-dweller, 419
Clouded tiger, head of, 423
Clouded yellow butterfly, egg, caterpillar and chrysalis, in colour, 6205
Cloudslee, William, story picture, 1391
Cloud that Talked, story, 5094
Clouet, François, one of the first French portrait painters, 1058
portrait of Elizabeth of Austria, 1054
Clouet, Jean, French painter, 1058
Clough, Arthur Hugh, English poet and author, 3986

See also Poetry Index

Clove, tree, spice from flowers, 2806
Zanzibar's production, 3315
plant, in colour, 2686
Clovelly, hamlet in North Devon, 843
Clover, different kinds, 2186, 4415
in New Zealand, 5710
leaves close at night, 329, 585, 2186, 4416

why does the farmer grow clover one year and wheat the next? 2174
crop growing in Manitoba, 2187
flowers of various species, 4540
in colour, 4417, 4419
seed of starry clover, 946
stem under microscope, 1910
Clovius, Frankish king and conqueror, first Christian king of France, 3917
victory at Zulpich, 4310
portrait, 3917

Club-moss, plant, belonging to pteridophytes, 3412, 3408

Clumps, game, 2118
Clunes, Major, Raeburn's portrait, 2176
Cluny, town in Burgundy, France, abbey served as model for whole of Europe, 5745

Cluny lace, beautiful example, 6734
Cluny Museum, Paris, 6368
Clustered bell-flower, 5288
in colour, 5394

Clutch, various forms, 6352
of motor-car, how it works, 4324
Clydesdale Horse, 1892

Clym of the Clough, story, 1391
Clytie, Roman sculpture, 4398
Clytus, arched, beetle, in colour, 6335
Cnidus, statue of Demeter found by Charles Newton, 6987

Coach, held up in snowdrift, 2747
Coal, immense value to Britain, 2833, 5018

age of South Wales field, 2834
Antarctic discovery, 5652
Australia's production, 2570, 2836
China's output, 6502
coalfield of Saxony and Silesia, 4427
Commonwealth's resources, 6004
course of invention influenced by, 2836
energy largely wasted, 5442
first household use in Stuart times, 1214
formed in Carboniferous Age, 1257
fossil remains of vegetation, 2370, 2833
Greek and Roman used coal, 2833
harmful gases given off, 2837, 3332
how it came, 10
if supply were exhausted, 4809
Italy's import needs, 4913
moths found in a mine, 6193
oily nature of carbon, 3282
production in Second World War, 2836
Russia's production, 6023
South Wales coalfields, 216
Sun's energy stored, 16, 6347
Switzerland's import, 4673
two miles from the surface, 2834
United States' production, 3681
Uno's plans for increased production, 6483

use for iron smelting begins, 1214
used long ago in China, 2833
waste of coal, 2838
weight of a cubic foot, 7074

Wonder Questions

how did men find coal in the Earth? 4020
how did the great coal forests come to be buried? 4764
is the coal in the cellar burning? 3040
what do we mean by carrying coals to Newcastle? 4892
what is anthracite coal? 3772
why does it burn? 5981
why is it the best thing for making a fire? 8596

picture-story, 2839-46
Coalfish, picture, 5105
Coal gas; see Gas, coal
Coal-mining, British industry, 2833
choke damp and fire damp, 3332
its dangers, 2837
lungs of miners become black, 1321
pories make mining possible, 1893
pumping engine invention, 5884
safety lamp, 1097
ventilation, 3282
working the seams, 2838
open-cast mining, 2835
picture-story of coal-mining, 2839-46
Coal Sack, The, in the Milky Way, 3854
Coal-tar, anaesthetics made from, 4472
its many uses, 4471
Coal-tar oil, 4471
Coal tit, bird, in colour, 2900
Coastal Lights, authorities which maintain, 3166

Coati, animal, characteristics, 792
ring-tailed species, 788
Coat-of-arms; see Heraldry
Coats, James, of cotton firm, 4105
Coats Land, explored by Bruce, 6556
Coaxial Cable, revolutionising telephony, 1966, 1974

Coaz, Johannes, Swiss botanist, observation of growth of plants, 2186

Cobalt, mineral, 2448
Cobbler and the Elves, story, 662
Cobden, Richard, English statesman, 5452

speaking at meeting, 5447
Cobego, animal, gliding powers, 291
Cobham Park, Kent, 2131
Cob nut, variety of hazel, 2068

Cobra, deadly snake, 2809

distribution, size, and habits of, 4620
pictures of different varieties, 4615
Coca, plant, where it grows, 2691
Cocaine, obtained from coca plant, 2691
Cocosteus, fish of Devonian Age, 1136
fossil, 1135

Cochin-China, Indo-China, 6512, 6513
Cochineal, insect, 5722
on cactus, 5721

Cock-a-doodle-doo, story, 4973
Cockatoo, characteristics, 3498
Leadbeater's, in colour, 3261

varieties of, 3499
young, 2641

Cockchafer, damage to crops, 6332

picture in colour, 6335
Cockermouth, Cumberland, Wordsworth's birthplace, 2471

Cockle, characteristics of, 6582
types of shells, 1178, 6577, 6580

Cockle, corn, flower, in colour, 4662
Cock of the North, railway engine, in colour, 1041

Cock of the rock, characteristics, 3146
Columbian, in colour, 3141

Cockpit, in aeroplane, parts, 4692
Cockroach, insect, 5720
domestic variety, in colour, 5713

Cockcroft, Professor John Douglas, English scientist, atomic research work, 4814, 6316

Cock's-comb; see Yellow-rattle

Cocksfoot grass, 3306
use as fodder, 2186

pictures, 582, 3309
Cock's-head; see Sainfoin, common

Cocoa, founding of three great English firms, 4108
Holland manufactures, 5531

how it is made, 1438, 2316
is cocoa good for us? 3396

Pictures of Cocoa

fruit growing on tree trunk, 2315
opening cacao fruits in Trinidad, 2311
plant, in colour, 2688
pod gathering in Ecuador, 2315
tree in Fiji, 2315

Coconut, uses, 2070
how does the milk get into it? 818

oil production in Zanzibar, 3315
robber crab eats coconuts, 5476

seed carried by sea, 949
gathering in Philippines, 2069
growth with blossom, 2065

raft of, 2069

Coconut crab, 5477

Coconut fibre; see Coir

Coconut palm, tree, 2070, 1437, 2451
Cocoon, protection for chrysalis, 6202
cocoons and raw silk, 6092-93

Cocos, or Keeling, Islands, Indian Ocean group, 3423

Cocteau, Jean, French poet and dramatist, 4458

Cocytus, river of Infernal Regions, 3531
Cod, fish, 8,000,000 eggs laid by, 4858
food of, 5106

picture, in colour, 5100
Code, how to speak in code, 254
how to write in code, 383

Code Napoleon, French code of laws compiled by Napoleon, 6726

Codlin moth, habits, 6201
Coddins and Cream, name for great willow herb, 6012

Coffee, Angola's exports, 6753
carrot substitute for, 2442
chicory used to adulterate, 4414

conditions for growth, 221, 2621
consumption in United States, 2312
cultivation methods, 2316

Do tea and coffee keep us awake? 2173
Turks' passion for coffee, 2316
what the plant and fruit are like, 2314

flowers and fruit, in colour, 2688
Coffer-fish, 5234, 5229

Coffin, ancient Egyptian, 70
sculptured lid from Kells, Meath, 3060

Cogan, Felix, his painting, Erasmus at Basle, 4957

Cohesion, what is meant by, 4894
Cofi, priest, idol and temple destroyed by his orders, 3098

Coil; see Electric coil; Induction coil
Coil-ignition, of motor-car, how it works, 4322

Coimbra, Portuguese city, 5398
general view, 5414

Coin, Dec's Disk, 2418
hanging coin trick, 1625
making a collection of coins, 5929

Old English, 7070
Roman coins in Editor's garden, 590

tricks, with pictures, 2609
use as weights and measures, 4344
why it is used as money, 3271

Wonder Questions

how did the words In God We Trust come on a coin? 2174
what are the grooves round a shilling for? 5001

earliest known, 5391
Coir, how obtained, and uses, 2566

Coke, Billy, hat named after, 6232
Coke, Sir John, portrait by Cornelius Jonson, 1927

Coke, in gas manufacture, 3335
Coke-oven, plant for carbonisation of coal, 3447

Colbert, Jean Baptiste, French statesman and patron of art, 3922
founded Academy of Arts, 1682, 1684

portrait, 3917
Colchester, Essex, castle's architecture, 6235

Celtic and Roman cities found, 6993
Saint Botolph's priory at, 964

picture, 1833
Roman relics found at, 6992

wooded section on Bypass, 2164
Cold, chemical processes cease at low temperatures, 5320

greatest extreme reached, 6314
physical explanation of, 5317

Wonder Questions

can anything boil when it is cold? 4998
is our blood cold when we feel cold? 5492

what makes our teeth chatter when we are cold? 4996

why does boiling water feel cold? 5734
why do we shiver when very cold? 6103
why is it colder on a mountain? 5004

See also Temperature; Zero
Cold (ailment), how do we give one another colds? 4763

where does a cold come from? 4890
why do we lose the sense of smell when we have a cold? 681

Cold Storage, how a refrigerator works, 1676
how frozen meat is stored, 1677

Cole, Thomas, American painter, 3286
Mountain Ford, painting by, 3290
Coleridge, Hartley, English poet and author, 2470, 3956
 playing at Wordsworth's feet, 3955
 portrait, 3953
 See also Poetry Index
Coleridge, Mary, English poet, 4081
Coleridge, Samuel Taylor, English poet and philosopher, 2472
 portrait, 2471
 See also Poetry Index
Coleridge, Sarah : see Poetry Index
Collet, John, English theologian and scholar, 4958
Erasmus's English friend, 4956
 portrait, 4955
 statue outside St. Paul's School, 4961
Colligny, Gaspard de, Admiral of France and Huguenot leader, 3917
Colima volcano, Mexico, 2249
Coliseum : see Colosseum
Collar bone, easily broken, 1693
Collared peccary, animal, 1655
Collarette dahlia, 6381
College of Arms, coats-of-arms granted by, 4984
Colleges, arms of, in colour, 4988
Colleoni, Bartolommeo, Italian soldier, captain-general of Venice, 272
Verrocchio's famous statue at Venice, 272, 277, 4523
 pictures, 276, 4530
 Verrocchio modelling horse for, 270
Collie, dog, 889, 667
Collier, Emily, Boy of Nazareth, painting by, 3591
Collier, John, English painter, painting of Death of Cleopatra, 427
Collinge, Dr. W. E., his investigation of feeding habits of wild birds, 6855
Collins, Wilkie, English novelist, 2848
Collins, William, English poet, 2102
 portrait, 2103
 See also Poetry Index
Colobus, Angolan monkey, 161
Cologne, city of the German Rhineland, 4428
 early school of painters at, 1185
 great railway centre, 4427
Cologne Cathedral, description, 5991
 view of, 6000
Colombe, Michel, great sculptor of the French Renaissance, 4644
Colombia, South American republic, 7021
 early inhabitants almost exterminated, 7002
 flags, in colour, 6972
 scenes, 7007
Maps of Colombia
 animal life of country, 7024-5
 general and political, 7019
 map, in colour, 7104
 physical features, 7020-1
 plant life of country, 7022-3
Colombo, capital of Ceylon, 2813
 Hindu temple, 2816
Colonies, England's wise treatment of during 19th century, 1586
 See also under specific names
Colonna, Vittoria, Michael Angelo's friend and helper, 8186
Coloradia venata, moth of Argentina, caterpillar, in colour, 6210
Colorado, U.S.A., almond orchard, 5977
 Hoover (Boulder) Dam, 4811, 5975
 Grand Cañon, 2131
 State flag, in colour, 6971
Colorado beetle, damage done by, 6462
Colorado River, U.S.A., 6847, 7059, 3806
Colosseum, Rome, the greatest of the Roman amphitheatres, 5504
 built by Titus, 2877
 gladiatorial fights stopped by Tele-machus, 1388, 1393
 walls covered with plants, 3180
 pictures, 1535, 1783, 5509
Colosseum, El Djem, Tunis, 5509
Colossus of Rhodes, 4403, 4884
 picture, 4887
Colour, how we see and distinguish colour, 3784, 5935
 animals see colours which men cannot see, 561

evolution in seeing due to cones, 3782
 fading of water-colour paintings, 2420
 in Nature, 38
 iron helps to make, 942
 photography, 4754
 protective colouring in Nature, 1551
 spectrum and its colours, 3850, 5816
 stars' colour, 3849
 sunlight's effect, 2301
 why blue cloth looks black when seen in red light, 5937

Wonder Questions

have things colour at night? 2788
 how does colour get into a bud before it is opened? 2414
 how do fireworks get their colours? 3889
 how many colours has the rainbow? 5492
 is there a colour our eyes cannot see? 561
 is there colour in the sea? 184
 what makes the colours of the sunset? 5615
 what makes the fire change colour? 4394
 where do colours come from in a stagnant pool? 6353
 why does the chameleon change colour? 564
 why does the sea change colour? 4762
 why do flowers vary in colour? 6347
 why do some colours change in gaslight? 3162
 why have the eggs of birds so many colours? 4288
Colour-blind, what is meant by, 1920
 why are some people colour-blind? 6844
Colour-changing trumpet anemone, in colour, 1555
Colour Competition, game, 128
Colton, W. R., British sculptor, sculpture of Springtide of Life, 4771
Colt's foot, member of Composite family, 4414, 6493; picture, 4412
Columba, St., Irish missionary to the Scots, 2777, 6919
Columbae, Pigeon family, 4119
Columbia, District of, federal district of U.S.A., flag, in colour, 6971
Columbian silk-moth, of U.S.A., caterpillar, in colour, 6210
Columbine, plant, member of Buttercup family, 5023, 6260, 6491
 picture, 6379
 picture, in colour, 5142
Columbine, player, origin of, 5427
Columbus, Christopher, Genoese navigator, 770, 1013, 1018, 2074, 2896
 student of maps and books of travel, 772, 1016
 turkeys brought from West Indies, 4254

Pictures of Columbus

at Council of Salamanca, 1017
 death, 1013
 house where he died, 5283
 interview with Queen of Spain, 1015
 landing in America, 1019
 looking out from the Santa Maria, frontis. Volume 6
 memorial in Madrid, 5286
 Queen Isabella gives jewels to, 1015
 statue at Genoa, 4923
Colum, architectural feature, 5378, 5496, 5500, 6111
 carved column in Florence, 71
 pictures, 550
Colvin, Sir Sidney, English literary critic and biographer, 3828
Coma, Berenices, constellation, spiral nebula in, 3975
Comb case, how to make in leather, 6924
Comber, fish, in colour, 5099
Combination, chemical laws, 4347
Combining machine, in rope-making, 180
Comedy, early Latin, 5425
 Ralph Roister Doister the first English comedy, 857
 what it is, 8039
Comedy and Tragedy, sculpture by Alfred Gilbert, 4653
Comedy of Errors, story of, 6040
Comenius : see Komensky, John Amos
Comet, Sun's wandering children 3602
 Biela's comet, disruption of 3607
 Brooks's, 3602, 3607

captured by planets, 3603
 composition and origin of, 3604
 Encke's, 3607
 Halley's, 3602, 3605
 Moorhouse's, 3607
 Pons Winnecke's, 3606
 famous comets, 3603, 3604
Comet, ship, 3738, 3735, 4862
Comfrey, plant, in colour, 6011, 6493
 flower, in colour, 6129
Comines, Philippe de, French historian, 4453
Cominform, Russian movement to spread Communist doctrine, 5902
Coming of Rustem, story and picture, 902
Cominius Pontius, his climb up the Capitol Hill, 5468
Comintern, Third International of Russian Communists, 5899
Comma butterfly, with egg, caterpillar, and chrysalis, in colour, 6207
Comment le Roitelet devint Roi, story in French, 5342
Comment Maitre Lapin fit Fortune story in French, 6322
Commerce : see Trade
Commercial traveller, work and reward in industry, 5688
Commissioners of Irish Lights, duties, 3166; flag, in colour, 6966
Commissioners of Northern Lighthouses, duties, 3166; flag, in colour, 6966
Committee of Supply, what it is, 4537
Commodus, Roman emperor, 2881
 portrait, 2879
Common, when coming before name of plant or animal : see under that name, as Mallow, common
Common Informer, what is a Common Informer? 6599
Common law, disadvantages of, 4774
 what it is, 4773, 4901
Commons, House of, interior, 2136
Communication cord, how it works, 4072
Communists, in Germany, 4302
Como, Lake of, in northern Italy, 4910, 4917
Comodoro Rivadavia, Argentinian oil centre, 7017
Comoro Islands, volcanic group off East African coast, 6750
Compass, Chinese first used, 106
 declination angle, 362
 dip of needle discovered by Robert Norman, 361
 how to use a watch as a compass, with picture, 4215
 influenced by sunspots, 3114
 Lord Kelvin improves, 6949
 ship's magnetic compass, 3575
 types, 3575, 6842
 why it points to the North, 359
Compensating governor, in engineering, 6350
Competition Medley, game, 255
Compiègne, fine town hall at, 6359, 6364
Complementary colours, what is meant by, 1920
Compositae, family of plants, 4413
 genera of, 6493
 bogland members, 5890
 heathland members, 5022
 mountain members, 5519
 seaside members, 5759
 stream members, 6010
Compound interest, how long does money take to double itself at compound interest? 5858
Compounds : see Chemistry
Compton Wynyates, Warwickshire, architecture of, 6236, 6249
Computing machine, electronic giant, 2717
Comte, Isidore Auguste, French philosophical writer, 4457, 4889
Comus, masque by Milton, 1234, 1231
Concave, what it means, 942
Concord, Temple of, at Girgenti, 5508
Concrete, canals sometimes lined with, 4865
 discovery of reinforced concrete, 6608
 road foundation, 2182
 Romans first make use of, 5503
 what is reinforced concrete? 6105
 its use in tunnel construction, 6213

reinforced concrete bridges in Sweden, 5160, 5161
Condenser, in gas cooling plant, 3449, 3452
Conditioned air, what it is, 6852
Condor, bird, 3832, 3627, 3635, 3636
Conduct, Confucius's teaching based on, 2032
 man first distinguishes between right and wrong, 170
 one standard for men and women, 2353
Conductor, musical, what does he do with his baton? 5494
Conductor in electricity, 234
 high tension transmission, 610
Cone (anatomy): see **Eye**
Cone (geometry), how to find area and cubic contents, 7076
Cone (nautical), why is a cone often hoisted at the seaside? 5491
Cone-shells, 6580
Coney, Biblical animal, the hyrax, 2021
Confederates: see American Civil War
Confessions of an Opium-eater, by De Quincey, 2971
Confucius, Chinese philosopher and writer, 2032, 5080
 Mencius extends his work, 6197
 odes collected by, 5674
 picture, 5077
Cong, Ireland, ancient cross, 3063
Conger eel, characteristics, 5104
 divers' adventures with, 5104
 pictures, 5095; in colour, 5097
Congo, Belgian, Africa, 6750
 maps, in colour, 7098-99
 map of physical features and industrial life, 3196-98
Congo, River, 2494, 6742, 6750
 mistaken for Nile by Livingstone, 3003
 traced to its mouth by Stanley, 3004
Congo Free State, old name for Belgian Congo, 6750
Congou, variety of tea, 2314
Congress, American national assembly's functions, 3682; first American, 3678
Congreve, Lady Celia: see Poetry Index
Conjuring, ball that answers questions, 4591
 boy conjuror's joke, 4592
 coin in the handkerchief, 5438
 coin tricks, 2809
 disappearing sixpence, 3722
 inexhaustible matchbox, 753
 lifting one tumbler with another, 874
 magician's jacket, 5071
 making a ball vanish and reappear, 2486
 mysterious paper purse, 1250
 mysterious penny, 5933
 simple tricks with a penny, 875
 suspended penny, 5194
 trick with nuts, 4951
 wandering halfpenny, 5688
 wizard's handkerchief, 753
 wizard's wand, 631
 young magician, 501
 See also Tricks
Conkers, game, 3476
Connard, Philip, English painter, 2677
 paintings by, 2670
Connecticut, American State, flag, in colour, 6970
 Yale university, 3683
Connemara, seaweed gatherers, 3069
Connor, Ralph, Canadian writer, 4336
Conor MacNessa, story, 3863
Conqueror and the Artist, story, 3370
Conqueror's Triumph, story, 156
Conquest of Mexico, The, Prescott's book, 7000
Conquest of Peru, The, Prescott's book, 7000
Conrad, Joseph, English novelist of Polish parentage, 3713, 3711
Conscience, authority of, 2725
 demands justice, 245
 its voices, 2353
 liberty of, 4210
Conscripts, The, painting by Dagnan-Bouveret, 2928
Conservatives, why so called, 2137
Consolation, The Consoler, by W. Bouguereau, 3533
Father's Consoler, sculpture, 5254
Consonant, what it means, 5613
Constable, John, English landscape painter, 212, 2306, 2420, 2543, 5892

helped by plumber to paint, 5693
 his portrait, 5691
 paintings by him, 2301, 2303-5
Constance, in Shakespeare's *King John*, 6289
Constance, Council of, 7054
Constance, Lake of, in Alpine region, lying between Switzerland, Germany, and Austria, 4876
Constantine, town of Algeria, 6744
Constantine the Great, Roman emperor, 446, 1907, 2883, 6916
 moved capital from Rome to Byzantium, 4406, 5740
 Triumphal Arch at Rome, 1779, 5503
 fighting in battle, 2882
 portrait, 2879
Constantine XIII, Roman emperor, last Eastern emperor, 5026
Constansco, George, pump gun described, 3648
Constantinople, Turkey: see *Istanbul*
Constantius I, Roman emperor, 2882
Constantius II, Roman emperor, 2879
Constellation: see *Stars*
Constellation, airliner, pictures, 434, 435, 438
Constituency, what it is, 4535
Constitution, British, Declaration of Rights drawn up, 1214
 extension of civic rights to Catholics, Dissenters, and Jews, 1585
 personal government by sovereign ends on accession of George I, 1327
 Reform Bill (of 1832), 1585
 the People's Magna Carta, 836
Consuls, British, flags, in colour, 6966
Consumption: see *Tuberculosis*
Contact-breaker, of motor car magneto, what it does, 4322
Contact sense, what is meant by, 1552
Continent, below Atlantic Ocean, 518
 what is the lost continent? 4019
 map showing its position, 4019
Continents, areas and average heights of, 7059
 drifting of responsible for climatic changes? 3037
 populations, 7059
Continga, Brazilian bird, 3146
Conure, golden, bird, in colour, 3144
Conurinae, macaws and American parakeets, 3498
Convention, French Revolutionary government, 4044
Conversion, meaning of word, 1982, 5926
Conveyer screw, 6352
Conveyer tunnel, on G.P.O. underground railway, 4383
Convolvulus, genus of order Convolvulaceae, 6493
 legend, 4734
 nuisance in garden, 4289
 pictures, 205, 4290
Conway, port of Carnarvonshire, Castle Street, 1461
Cook, Eliza: see Poetry Index
Cook, Captain James, English navigator, explored the coasts of New Zealand and New South Wales, 2380, 2569, 2696, 4604, 6549
 discovery of New Zealand, 2078
 monument on Easby Moor, Yorks, 343
 ship in danger, 2376
 tree to which he tied ship, 4863
Cook, beginning of a cook's day, with pictures, 628
 learning to be a good cook, with pictures, 377
Cooke, Sir William Fothergill, English electrical engineer, 1802
Cookery, A.B.C. of, 507
 baked, boiled, and batter puddings, 1247
 beginning of a cook's day, 628
 cake-making, baking, and decoration, 1121
 cooking fish and meat, 997
 home-made sweets and toffee, 1742
 learning to be a good cook, 377
 making bread and scones, 752
 picnic and camp meals, 1993
 right way to cook vegetables, 871
 sauces, soups, and savoury snacks, 1369
 scrambled eggs and omelettes, 1864
 some special party dishes, 1623
 tarts and biscuits which taste good, 1492

to candy flowers and fruits, 2238
Cook Islands, Polynesian island group under New Zealand administration, 2697
Coolidge, Dr., his tube described, 2588
 picture of tube, 2585
Coolidge, Susan: see Poetry Index
Cooling Castle, gateway, 1590
Coomassie, or *Kumasi*, Gold Coast, street scene, 3322
Cooper, Sir Edwin, architect of P.L.A. offices, 4230, 6611
Cooper, George: see Poetry Index
Cooper, James Fenimore, American romantic novelist, 4331
Cooper, Samuel, English miniature painter, 2049
Co-operation, life made richer by men's co-operation, 299, 6123
Coot, bird, characteristics, 4004, 4003 in colour, 2765
Copenhagen, Denmark, 5149, 5163
 English capture (1801 and 1807), 5146
 scenes, 5147, 5164, 5165
Copenhagen, battle of, also known as battle of the Baltic, Nelson's great victory over Danish fleet, 1454, 5146
Copernicus, Nicholas, Polish astronomer, 3488, 3760, 5027
 Galileo adopts teaching of, 3610
 last moments, 3491
 portrait, 3487
Cophetua and Beggar Maid, painting by Sir E. Burne-Jones, 2824
Coping, what it is, 5864
Copley, John Singleton, historical and portrait painter, 2419, 3286
Copnall, Bainbridge, British sculptor, 4896
Copper, British Empire and Commonwealth output, 2074, 6004
 Australia's production, 2570
 Belgian Congo's exports, 6752
 Canada's production, 2324
 conductivity, 7073
 electrolytic, 856
 good conductor of heat, 5321
 in electric cell, 483
 melting and boiling points, 4998, 7073
 Northern Rhodesia's production, 3314
 tensile strength of copper wire, 7073
 weight of a cubic foot, 7074
 metallic copper in copper ore, 1302
 See also maps of industries under names of countries
Copper pyrites, mineral, 1302
Copper underwing moth, and caterpillar, in colour, facing 5935
Copping, Harold, Hope of the World, painting by, 5559
Copra, production in British Solomon Islands, 3427
Zanzibar's production, 3315
Coptic Church, in Abyssinia, 6754
Copying, simple apparatus, 2362
Coracle, crossing the Tigris, 2498 in a museum, 4859
Corais snake, of South America, 4619
Coral, Australia's coral reefs, 2444
 beginning of, 1011
 in Jurassic Age, 1508
 mountains made of, 518
 two kinds, 6697
Coral polyip, the reef builders, 6701
Coral Sea, Battle of, the naval victory over Japan during Second World War, 1944
Coral-weed, scaly, seaweed, 3413
Corbet, Richard: see Poetry Index
Cord, used in tyre manufacture, 1409
Corday, Charlotte, French patriot, 654, 4044; portrait, 647
 on way to execution, 649
Cordelia, in Shakespeare's *King Lear*, 6169
 appealing to King Lear, 1106
 renounced by him, 1105
Cordillera, chain of Andes, 7005
Cordonnier, J., French sculptor, 4647
Blind Beggar, sculpture by, 4654
Cordova, Spanish city in Andalusia, 5692
 bridge across Guadalquivir, 5285
 pictures of mosque, 5623, 5630, 5633
Corceopsis, flower, 6378
Corfe Castle, picturesque town on the Isle of Purbeck, Dorset, 844, 963

- Corfu**, northernmost of the Greek Ionian islands, general view of the port of Corfu, 5779
harbour and citadel, 5773
street scene, 5778
view from Achilleion garden, 5777
Coriander, where it grows, 2808
Corinth, capture of, 5780
Temple of Apollo at, 5510
Corinth Canal, Greece, reconstruction after Second World War, 5766
with pictures, 4876
Corinthian column, origin, 5500
picture, 5497
Coriolanus, why he is famous? 4641
Cork, city of Republic of Ireland, 3068
Court House, 3072
National Monument, 3073
St. Fin Barre's Cathedral, 3073
See also Ireland
Cork (bark), Portugal exports, 5402
Spain's great export, 5277
specific gravity of, 4954
scene in cork yard in Spain, 5273
stacking cork in Portugal, 5401
used in making of a cricket ball, picture series, 4262-3
Corklet anemone, different kinds, in colour, 1553, 1554, 1556
Corkwing, fish, in colour, 5097
Cormorant, characteristics, 3748
Chinese method of fishing with, 3748
black, with outstretched wings, 3749
Chinese fishing expedition, 6508
crested, or shag, in colour, 2898
crested, or shag, on nest, 3749
in colour, 2766
Corn (grain): see Cereals; and under specific names, such as Wheat
Corn, what is a corn? 930
Corn bunting, bird, in colour, 3021
Corn buttercup: see Corn crowfoot
Corn chamomile, what it is like, 4542
flower, in colour, 4661
Corn-cockle, difficulty of separating from wheat, 3178
what it is like, 4542
flower, in colour, 4662
Corncrake, bird, 4004
in colour, 3021
route of migration, 223
Corn crowfoot, or corn buttercup, what it is like, 4543, 4540
Cornea, what it is, 3181
Corn-ear worm, maize damaged by, 1702
Corneille, Pierre, French poet and writer of plays, portrait, 4453
Cornel, flower, in colour, 4905
Cornelia, mother of the Gracchi, 4353
Cornelius, centurion of Caesarea, 6172
Cornell, Ezra, American electrical engineer, 1803
Corner Brook, Newfoundland's second largest town, scene, 2331
Corneto Tarquinia, site of original Etruscan capital, 6994
Corn feverfew: see Scentless mayweed
Cornfield, The, Constable's painting in National Gallery, 2543
Corn flag: see Yellow iris
Cornflower, what it is like, 4542
flower, in colour, 4662
flower of perennial species, 6380
Corn gromwell, member of Borage family, 4543; flower, in colour, 4661
Cornice, its importance in British buildings, 6812
Cornish money-wort, member of genus *Sibthorpia*, 6011, 6493
Cornish stone, for earthenware, 301
Corn Law Rhymes, by Ebenezer Elliott, 3956
Corn Laws, Cobden and Bright fight against them, 5452
repeal by Sir Robert Peel, 1588, 2137
Corn marigold, what it is like, 4542
flower, in colour, 4661
Corn mint, what it is like, 4544
flower, in colour, 4662
Corn parsley, of genus *Carum*, 6492
relation of caraway, 4543
flower, in colour, 4661
Corn-root aphid, life-story, 5711
Corn salad, what it is like, 4543
flowers, in colour, 4661, 4662
Corn sow-thistle, what it is like, 4542
flower, in colour, 4664
- Corn thrips**, insect, 5721
Cornucopia, heraldic charge, 4986
Cornwall, Barry (B. W. Procter): see Poetry Index
Cornwall, south-westernmost county of England, ancient beehive-shaped huts still to be seen there, 5376
ancient tin-mines and hill forts in, 6997
clay used for china, 301
geology of, 1136
Phoenician visits for tin, 3381
places in, 7155
road map, 7119
Cornwallis, General, Americans receive his surrender, 3794
Cornwall, Jack, story, 6196; picture, 6192
Corn woundwort, what it is like, 4544
flower, in colour, 4663
Corolla of petals: see Petal
Corona, of Sun and comets, 3116, 3603
during eclipse of Sun, 3110
Coronation, engine, in colour, 1043
Coronation, of George VI and Queen Elizabeth, 1829
Coronation stones, 952, 4863
Coroner's court, work of, 4777
Coronet, in heraldry, 4986
Coronium, element, 2918, 3116
Corot, Jean Baptiste, French painter, 2790
Pictures by Corot
Cows standing in a marsh, 3170
Evening, 2796
Lake Garda, 3660: landscape, 2796
Orpheus and Eurydice, 6929
The Bent Tree, 2795
Corpus Christi College, Cambridge, arms, in colour, 4988
Corpus Christi College, Oxford, arms, in colour, 4988
quadrangle, 6247
Correggio, Antonio da, Italian painter, 936
Madonna and St. Jerome, painting, 939
Madonna of the Basket, 933
Corsica, island department of France, 4171
map, in colour, 7084
volcanic rock found there, 2004
Cortes, Spanish parliament, 6856
Cortes, Hernando, Spanish soldier, 7000
conquest of Mexico, 1021
Cortex, of root, what it is, 458
Cortona, Etruscan relics found at, 6994
Corunna, port in north-west Spain, 1457, 5278, 5410
Cory, William Johnson: see Poetry Index
Corymb, what it is, 5520, 6495
Corymbites, in colour, 6335-6
Cos, Dodecanese island, Italy cedes it to Greece, 4909
Costmo, Piero di, Florentine painter, 574
his painting, Death of Procris, in National Gallery, 574
Cosmati, Italian family noted for fine medieval mosaic work, 6732
Cosmic dust, name given by astronomers to matter said to exist in space, 5319
Cosmic ray, Professor Millikan's work, 4224
penetrative effects, 6318
Cosmos, Humboldt's great book, 5593
Cossacks, Russian steppe people, 5894
Costa, Joachim, French sculptor, 4618
Costa Rica, Republic of Central America, 7008
flags, in colour, 6972
ox-carts on road, 7009
San José cathedral, 7009
general and political map, 7026
map, in colour, 7103
Costigan, explorer of Dead Sea, 6988
Cosway, Richard, English miniature painter, 2419
Princess Lubomerski, miniature, 2421
Princess Sophie, miniature, 2421
Cotman, John, English landscape painter and etcher, 2306
Wherries on Yare, painting by, 2304
Cotopaxi, volcano in Ecuador, 7005
Cotswold hills, description, 468
Cottle, British bookseller who published books by Lamb and Coleridge, 2472
Cotton boll weevil, damage done to cotton crop, 2582
life-story, 6457
- Cotton grass**, member of order Cyperaceae, 6197
what it is like, 5892
flower, 5889
seeds flying off, 947
Cotton manufacture, the industry, with pictures, 173-78
child labour a sordid chapter, 172, 244
cotton-gin invented by Eli Whitney, 172, 1638, 5943
cotton used for candlewicks, 1214
Lancashire's great industry, 172, 5263, 6839
spinning-jenny invented by Hargreaves, 5939
Cotton plant, 171, 2581
British Empire and Commonwealth cotton areas, 2074, 6005
damage by boll weevil, 2562, 6450
India's acreage, 2947
St. Vincent's (Windward Islands) production, 3555
United States' production, 3680
wages earned by pickers, 2562
for production of cotton in various parts of the world: see descriptions of countries and plant life maps
- Pictures of Cotton Plant**
boll and flower, 173
pickers in Georgia, U.S.A., 173
picking in Tennessee, 3693
picking on Sudan plantation, 2561
plant, in colour, 2685
preparing ground in Egypt for seed, 171
Cotton reel, how to make a spinning top from one, 2116
Cotton weed, of genus *Diotis*, 6493
seaside species, flower, in colour, 5644
Cottus, fish, in colour, 5099
Cotyledon, seed lobe, 6189
Coucal, bird's nest, 3379
Egyptian, 3377
Couch grass, relative of wheat, 1571
pictures, 584, 3307
Coulman Islands, Antarctic group, 6550
Coulomb, definition: see Units of electricity, 7071
Council, in Local Government, 4407
Counties of England, guide to 10,000 places, 7153
maps, 7109
Count of Monte Cristo, story by Alexandre Dumas, 4457
Counting, why do we count in tens? 2540
- COUNTRIES**
The following are actual headings of the chapters in this group: the subjects dealt with will be found in their proper places in the index
This Great World of Ours, 87
Our Homeland, 209
Seeing Our Homeland from the Sea, 337
Our Great and Little Hills, 461
England in the Long Ago, 587
The Conqueror Comes, 707
The People's Magna Carta, 835
Fighting for the Throne, 951
The Times of the Tudors, 1073
The Times of the Stuarts, 1205
From the Stuarts to Napoleon, 1327
Napoleon and His Conquerors, 1441
The Wonderful Century, 1581
Our Century Begins, 1705
Our Country Between the Wars, 1823
The Second World War, 1941
The Rise of Britain Overseas, 2071
The Last Land of Canada, 2191
Canada's Growth to Nationhood, 2317
Australia, the Wonderful Island, 2443
The Australian States, 2569
New Zealand, 2693
India and Its Millions of People, 2809
India's Dramatic Story, 2943
Ireland and Its Story, 3061
British South Africa, 3183
The Flag in Africa, 3311
Outposts of the Empire (East), 3417
Outposts of the Empire (West), 3553
The United States of America, 3673
The History of the United States, 3791
France to the Revolution, 3917
France from the Revolution, 4043
France In Our Time, 4163
The Long Story of Germany, 4291
The Face of Germany, 4421
Austria's Rise and Fall, 4545

Switzerland, 4665
Italy and Its History, 4783
Italy In Our Time, 4909
Poland and Its People, 5025
Scandinavia, 5145
Spain and Her Story, 5269
Portugal and Her Story, 5397
Holland and Its People, 5523
Belgium and Her People, 5645
Greece and Its People, 5765
Russia Through the Centuries, 5893
Russia In Our Time, the U.S.S.R., 6013
Turkey as She Was and as She Is, 6131
Arabia and Its People, 6261
Persia and Its Story, 6385
China and Her Neighbours, 6499
Japan and Its Story, 6617
The African Continent, 6741
Egypt and Its 100 Centuries, 6871
Latin America, 6999
Countries, which are the smallest countries in Europe? 8557
areas and populations in table form, 7060
Country, poets of the, 2101
is country healthier than town? 561
County Borough, what it is, 4411
County Council, Local Government carried on by, 4407, 4411
County Court, its work explained, 4776
County Hall, London, designed by Ralph Knott, 4230
Coupling rod, on railway engine, 3946
Coupling, universal, 6352
Courage, great and noble word, meaning explained, 371
Barrie's address on courage, 2250
Courbet, Gustave, French painter, 2923
Stag Fight, painting by, 2925
Courlan, great, bird, 3873
Courtauld, Samuel, artificial silk pioneer, 4105
Courthope, William John, English poet, 3831
Court of Appeal, what it is, 4775
Court of Chancery, origin, 4774
Court of Equity, origin and end of, 4774
Courtrai, old walled town in Belgian Flanders, 5650
Broel Bridge, 5659
Hôtel de Ville, 6001
Courtship of Miles Standish, poem by Longfellow, 4202
Couse, Irving, American painter, 3288
Fishing Village, painting by, 3292
Cousin Jean, early French painter and engraver, 1882
stained-glass windows by, 6731
Coustou, Guillaume, sculptor who hewed the famous Horses of Marly in Paris, 4645
Coustou, Nicholas, French sculptor, 4645
Couthillas, Henri, his sculpture, Evening Rest, 4898
Covenant, name for Testament, 117
Covenanters, religious service of, 2719
Covenant of Human Rights, 6488
Covenant of Scotland, signing of, 4007
Coventry, Warwickshire, arms, in colour, 4990
Coverdale, Miles, translator of the Bible, 6858
Cow, conditions for good milk and cream, 2308, 2310
Hindus regard it as sacred, 1151
how does a cow make its milk? 4760
milk production, 1154
simple way to draw a cow, with picture, 2235
United States' millions, 3680
various breeds, 1159, 1160
See also Cattle; Milk
Coward, wrong use of word, 371
Cowbane : see Water hemlock
Cowberry, of Cranberry family, 5517
Cowbird, habits, 2895
picture, 2893
Cowdray, Lord, a creator of industry, 4106; portrait, 4102
Cow-dung fly, insect, in colour, 5714
Cow-fish, nickname of coffer-fish, 5234
Cow grass, variety of red clover, 2188
Cowley, Abraham, English poet and essayist, 2969
See also Poetry Index
Cow-pea, what it is like, 2432
plant, 2441

Cowper, William, English poet and writer of hymns, 2104
description of laburnum flower, 4042
birthplace, 2103
portraits, 1759, 2103, 4135
writing in his study, 2101
See also Poetry Index
Cowry, use as money, 6586
shell, 1178, 6580
Cowslip, meadow flower, 4415
does not grow in Devon or Cornwall, 5252
flower, in colour, 4417
Cow-wheat, member of genus Melampyrum, 6493
flowers, in colour, 4663, 4906, 4908
Cox, David, English landscape painter, 2425
Sheep-shearing, painting, 2423
Waiting for the Ferry, 2423
Coxwell, Henry, English balloonist, 20, 21
Coyote, animal, 539, 536
Coypu, rodent, 1036, 1032
Coysevox, Antoine, French sculptor, 4645
Cozens, Alexander, English water-colour painter, 2420
Cozens, John Robert, English landscape painter, 2420
Santa Giustina, Padua, painting, 2422
Crab, family of the crabs, 5471
pictures of varieties, 888, 5471, 5477
Crab-apple, ancestor of cultivated apples, 1201
uses of fruit, 4039
development of, 1201
flowers and leaves, 4156
fruit, in colour, 3665
Crabbe, George, English poet of rural life, 3953
born at Aldeburgh, Suffolk, 212
meeting with Scott, 2011
portrait, 3953
Crab-eater seal, 909
Crab-eating dog, 541
Crabro, four-spot 1 sect, in colour, 5714
Crab spider, 5599
Cracow, Polish city, 5025, 5031
castle at, 5025
scenes, 5037
Crafts, different kinds, 6731
pictures, 6731, 6733-36, 6739
Craftsmen, the great craftsmen, 3855
Craig-yr-allt-goch, reservoir, 4506
Crake, spotted, bird, in colour, 3024
Cramp, what causes it? 1176
Cranach, Lucas, called the Elder, early German painter and engraver, 1188
portrait of Katherine von Borg, 1186
Cranberry, plant and fruit, 5517
fruit, in colour, 3666
Crane (bird), characteristics, 3874
pictures of varieties, 3264, 3873
Crane and the Wise Crab, story, 3251
Crane-fly, characteristics, 6084
 grub and pupa case, 6087
insect, 6087; in colour, 5714
Cranesbill, different kinds, 4416, 4782
yellow balsam member of family, 5520
expulsion of seed, 946
flowers of various species, in colour, 4420, 4905, 5643, 6120
Crank, mechanism, 3212
various kinds, 6349, 6351, 6352
Crank axle, in railway engine, 3946
Crankshaft, position in motor-car engine, 4327
Cranmer, Thomas, archbishop of Canterbury, 1081, 1477, 7056
portrait, 1077
steel band that fastened him to stake, 4862
taken to the Tower of London, 1083
Crater, in the Moon, 3484, 3486
of a volcano, in colour, facing 393
Crawford, Isabella Valancy, Canadian poet, 4205
Crawford, Julia, Irish song writer, 1266
Crayfish, lobster's freshwater cousin, 5479, 5477
Cream, why children should have plenty, 2308
do microbes help to make cream? 698, 4758
what makes it form? 2540
Creation, The, story told in Bible, 247

Greek search for its causes, 914
oratorio by Haydn, 146
Crecy, battle of, 952, 954, 3920
Credi, Lorenzo di, Florentine painter, 574
Madonna and Child, painting by, 567
Virgin, painting by, 572
Creep, blue, bird, in colour, 3141
Creep, tree, bird, in colour, 3021
Creeping bell-flower, in colour, 4288
Creeping buttercup, what it is like, 4415
Creeping cinquefoil, in colour, 4287
Creeping-jenny, what it is like, 6010
Creeping lithosperm : see Purple groundsel
Creeping plume thistle, member of Composite family, 4414
flower, in colour, 4420
Creeping rest-harrow, member of Pea family, 5762
Creeping soft grass, 3309
Crefeld, manufacturing centre of Germany, 4426
Cremona, city of Italy, its baptistry, of Romanesque architecture, 5746
Creodonts, mammal type of millions of years ago, 905
Cresset, wood preserved with, 4136
Crescent, in heraldry, 926
Cresilas, Cretan sculptor, 4269
Cress, classification, 2434, 6491
flower of pennycress, in colour, 4420
Crest : see Heraldry
Crest coronet, in heraldry, 4986
Crested buckler fern, in colour, 1797
Crested cow-wheat, flower, in colour, 4908
Crested dog's-tail, grass, 3307
Crested guinea fowl, 4249
Crested lark, 3015
Crested newt, 4745
Crested pelican, 3749
Crested screamer, group of birds, 3755
Crested tit, bird, in colour, 3023
Cretaceous Age, description of, 1633
duration of, 10
fossil remains found in rocks, 1635
iguanodon, in colour, facing 1505
reptilian life of, 10, 1635
map of Britain, 1634
Crete, Greek island in the Aegean Sea, ancient civilisation in, 796, 6805, 6860
excavations at, 322, 4023, 6955
frescoes and vases, 322
Pictures of Crete
draughtboard found in, 794
hillside village in, 5779
mountain road, 5777
palace of Knossos, staircase, 6991
palace of Phaestus, ruins, 6990, ruins of a temple, 794
shrine of snake goddess, 4025
throne of Minos at Knossos, 6991
vases found in, 795, 4025, 6985, 6991
Maps of Crete
general and political, 5788
historical events, 5781
industrial life, 5787
map, in colour, 7089
Crewe, Marquess of : see Poetry Index
Criccieth, Carmarthenshire, abbey, 964; view, 1462
Cricket (game), co-operation illustrated by team, 6123
how to play, 3967
mysterious bat, trick, 3474
what are the Ashes? 2662
how cricket bats and balls are made, pictures-series, 4261-63
old bat and ball game, 1923
underground school in London, 4384
Cricket (insect), habits of, 5716
ear on leg, under microscope, 1911
varieties, in colour, 5713
Cricula trifenestrata, of Himalayas, caterpillar, in colour, 6209
Crimean War, Britain joins Turkey against Russia, 4623
Florence Nightingale's work, 3984
senseless war that accomplished nothing, 1588
Florence Nightingale nursing wounded, 2351
Crimson fruit crow, bird, in colour, 3262
Crimson vetchling : see Grass vetchling
Crinan Canal, Scotland, 4867

- Crinoids, animals that grew stalks, 1011
 Cripps, Arthur Shearly, missionary-poet of South Africa, 4206
 Crispin, St., patron saint of shoemakers, 6809
 Crittall, Richard, inventor of metal window frames, 4110
 Crivelli, Carlo, Venetian painter, 932
 Croad langshan, fowl, 4253
 Croatia, Yugoslavia, 4556
 Croce, Benedetto, Italian philosopher, 4553
 Crochet, how to crochet: a shawl, with picture, 3473
 learn to crochet by making motifs, 3351
 Crocidolite, blue asbestos, mineral, 1304
 Crock anemone, in colour, 1554
 Crocodile, breathing of young, 2387
 characteristics of, 4490
 rhinoceros killed by one, 1776
 why did the Egyptians worship crocodiles? 6726
 by River Nile, 4488
 Triassic Age, 1383
 Crocodile and the Monkey, story, 4359
 Croesus, last of Lydian kings, 3239
 Cyrus conquers, 6386
 appeals to Cyrus, 6799
 Croesus saw-fly, insect, in colour, 5714
 Crofts, Ernest, English painter, his Burial of Charles I at Windsor, 1209
 Cromwell rides through York, 1211
 Napoleon at Waterloo, 1447
 Wellington's March to Waterloo, 1447
 Croisy, Aristide, The Nest, sculpture, 5014
 Crome, John, called Old Crome, English landscape painter, 2306
 Poringland Oak, painting by, 2305
 Windmill, painting by, 2304
 Crome, John Bernay (Young Crome), painter of Norwich school, 2308
 Cromer, Norfolk, view of sands, 1834
 Cromer, Lord, his Egyptian administration, 6871
 Crompton, Samuel, English mechanic, inventor of the spinning mule, 172, 5941
 portrait, 5939
 scolded by his mother, 5938
 Cromwell, Oliver, English soldier and statesman, Protector of the Commonwealth, 581, 1208
 body hung at Tyburn, 524, 4008
 born at Huntingdon, 813
 Carlyle's Life of Cromwell, 524, 3216
 Clarendon's verdict on, 523, 3094
 how he trusted his granddaughter, 5706
 Ireland still hates name of, 1810, 3066
 Thornycroft's statue, 524
 Union Flag discarded by, 6962
- Pictures of Cromwell**
 at the Battle of Naseby, 4005
 calling upon God, frontis. Volume 3
 death in Whitehall, 1213
 flags of his time, in colour, 6968
 leaving Parliament, 1213
 Mrs. Cromwell reading letter from, 527
 Parliament men leaving London, 4007
 portraits, 71, 525, 4132
 riding through York, 1211
 Cromwell, Richard, succeeded Oliver Cromwell as Protector, 1210
 Cromwell, Thomas, English statesman, 1076
 Holbein's patron, 6873
 Cronaca, Simone Pollajuolo, architectural work in Florence, 6108
 Cronos, or Saturn, god of ancient Greece and Rome, 3514
 Crookes, Sir William, English chemist, 6315
 cathode rays, bent by magnet, 2467
 on Hertz's experiment, 2092
 vacuum tube experiments, 2585
 wheat shortage problem, 1576, 2427
 in laboratory, 6311
 Crookes tube: see X-rays
 Croquet, how to play, 4832
 Crosby, Frances Jane, American hymn-writer, 1758
 Crosby Hall, London, old front, 6246
 Cross, C. F., artificial silk pioneer, 4105
 Cross, at Cong, Ireland, 3063
 Monasterboice, Ireland, 3060
 St. Columba's at Kells, 3060
 symbolical, 116
- Cross ball, game, 3596
 Cross belt, to drive pulleys, 6349
 Crossbill, bird, in colour, 3022
 Crossing the Bar, Tennyson's poem, 3338
 Crossing the Rubicon, what does it mean? 5815
 Cross-leaved heath, 5019, 5021
 Crossorhinus, harmless shark, 5228
 Cross-stitch, how to make design in, with pictures, 3846
 Crossword Puzzle, how to make, with pictures, 4343
 Crotona, Pythagoras establishes monastery at, 1040, 5425
 Crouch, F. N., wrote music of Kathleen Mavourneen, 1266
 Crow, members of family, 2763, 2769
- Pictures of Crows**
 black-backed piping, 3017
 carrion, in colour, 3021
 crimson fruit, in colour, 3262
 hooded, in colour, 3021
 white-backed piping, 3017
 white-necked, 2773
 Crow and the Pitcher, fable with picture, 4245
 Crowberry, fruit, in colour, 3669
 Crowfoot, flower, 6009
 Crowland Abbey, ruins, 961
 Crown, in heraldry, 4986
 Crowned hawk eagle, 3634
 Crowned pigeon, 4123
 Crowning of Dreaming John, The, pictures to poem, 7037-40
 Crown wheel gear, 6350
 Crows and the Ankiel, story, 3495
 Crowther, Bishop, missionary, 3246, 3239
 Crozier, Cape, Antarctic headland, 6550
 Cruciferae, family of plants, 4415
 Crusades, account of First Crusade, 3267
 Children's Crusade, 3932
 Crusaders pledged to fight enemies of Christianity, 2478
 Louis IX of France joins, 2252
 monuments of Crusaders in Temple Church, London, 5868
 Richard I joins, 720, 3270
 St. Bernard preaches the Second, 1386
 share of Venice in, 271
 Crustacea, family of, 42, 5471, 6575
 Silurian Age development, 1009
 Crying, why do I laugh and cry? 59
 why does a lump rise in my throat when I cry? 2665
 See also Tears
 Crying proverbs, game, 8348
 Cryptogram, meaning of word, 3409
 five kinds, 3408
 Crystal, structure, 2004, 4749
 See also Ice
 Crystal-analysis, by X-rays, 2590
 X-ray photographs of crystal structure, 2592
 Crystal Palace, first important British building made of metal, 6006
 Cuba, West Indies, 7022
 Cortes sails from, 7000
- Pictures of Cuba**
 anolis, reptile, 4493
 flag of the island, in colour, 6972
 Havana tobacco plantation, 2936
 mocking bird, 3017
 scene in a tannery, 3160
 solenodon, animal peculiar to, 293
 trogon, bird of, 3254
 views, 7005
- Maps of Cuba**
 general and political, 7026
 map, in colour, 7103
 Cube, how to find cubic contents, 7076
 Cubic Measure: 7069
 Cubism, in art, explanation of, 3043
 Cubit: See Old English Measures, 7069
 Chulain: see Chulain
 Cuckoo, family of, 3375
 eggs left in nests of other birds, 2895
 baby being fed by meadow pipit, 3379
 picture, in colour, 2767
 varieties of, 3375, 3377
 Cuckoo flower: see Lady's smock
 Cuckoo orchis: see Early purple orchis
 Cuckoo-pint, plant, 208, 4234
 fertilisation, in colour, 2047
- flower, 4290; fruit, in colour, 3669
 Cuckoo ray, in colour, 5098
 Cuckoo wrasse, in colour, 5100
 Cucurbit, plant, 2432, 2434, 4283
 fine crop in English greenhouse, 2440
 Cucurbit, squinting, method of dispersal of seeds, 946
 Cudgel, game, 3108
 Cudweed, flowers, in colour, 5142, 6128
 Cugnot, his steam locomotive, 2746
 Cumacan Sibyl, painting by Elihu Vedder, 3292
 Cumberland, northern English county, description, 215
 places in, 7155
 road map, 7143
 Cumulo-nimbus, pictures, 2871, 2872
 Cumulus, what it is, 2866, 2921, 2870
 Cunaxa, battle of, March of the Ten Thousand, story, 1890
 Cuneiform writing in Babylonia, 6868
 oldest records in, 800
 Cunningham, Allan, Australian explorer, 6064
 Cunningham, Allan, Scottish poet: see Poetry Index
 Cunningham, Allan, Scottish poet: see Poetry Index
 Cunningham Graham, Robert Bontine, Scottish writer, 3829
 portrait, 3827
 Cuny Rabbit and the Lion, story, 154
 Cunobelinus, king of Britain, 2400
 Cup, manufacture of a teacup, 304
 Cupid, Venus's son in mythology, 3517
 marriage with Psyche, 5579
- Pictures of Cupid**
 Cupid and Butterfly, by Chaudet, 4651
 Cupid and Psyche, by Canova, 4650
 Cupid & Psyche, by Thorwaldsen, 5258
 Cupid seeks sympathy from Venus, 5257
 Cupid with dolphin, sculpture, 4402
 Greek sculpture, 4274
 sculpture by Falconet, 4899
 sculpture by Gilbert, 4656
 sculpture by Laurent Marqueste, 5132
 Cup moss, daisy-flowered, plant, 3408
 Cuprite, oxide of copper, mineral, 1303
 Cupro-uranite, mineral, 1304
 Curaçao Islands, Dutch colony in East Indies, 5532
 Curassow, bird, 2451
 Curie, Marie, discoverer, with her husband, of the element radium, 6316
 powers of radium and compounds, 4223
 in laboratory, 6311
 Curiosity, power in science, 426, 3877
 Curium, unstable, man-made element, 4221
 Curius Dentatus, Roman statesman, soldier and farmer, 5859
 Ennius on his character, 5428
 refusing bribes, 1407
 Curlew, characteristics of, 3874
 picture, 3875; in colour, 2898
 Curly kale, variety of cabbage, 2436
 picture, 2437
 Currant, member of Saxifrage family, 1820
 dried form of grape, 1818
 pictures, 1816, 1817, 3669
 Currant bud mite, picture, 5599
 Current, climate regulated by ocean currents, 2496
 what makes it, 5250
 Curves, why does a train not run off the lines when rounding curves? 6729
 Cuscus, animal, characteristics, 2390
 spotted, 2396
 Cushion, how to make a patchwork one, 3972
 Custom, basis of law, 4773, 4901
 Customs, British, flags, in colour, 6966
 Customs duty, what it is, 4660
 Cuthbertson, J. L., Australian poet, 4206
 Cut-leaved saxifrage: see Mossy saxifrage
 Cutlery, Sheffield the largest manufacturing centre, 2909
 picture-story, 2910-14
 Cut-out, electric: see Fuse-box
 Cuts, how to treat, 6178
 Cut-throat finch, weaver bird, 2896
 Cuttle-fish, commercial uses of the squid, 5232, 5229
 Cuvier, Georges, French naturalist, 5573
 at work in laboratory, 5571
 Cuvier's gazelle, 1401

Cuyp, Albert, Dutch painter, 1426
 river scene with cattle, by, 1427
 Cuzco, city of Peru, 7020
 captured by Pizarro, 7000
 Inca masonry, 7010
 Cyanamide, calcium, fertiliser, 1228
 Cyaxares, Median king who overthrew
 the Assyrian empire, 6386
 Cybele, goddess of Asia Minor, 6984
 Cycle-car, early type, 4318
 Cycle of life, explanation of, 86, 85
 Cycling, safety first rules, 6837
 Cyclist's track, at Ealing, 2165
 Cyclone, meaning in weather chart, 6721
 Cyclopes, mythological giants, 5830
 story in the Odyssey, 5304
 Cyclops, with egg-sacs, under micro-
 scope, 1914
 Cydnus, river, through Tarsus, 5679
 Cygnet, The, pirate-ship in which Damp-
 pier first reached Australia, 2380
 Cylinder (engine), position on motor-
 cycle, 4327
 Cylinder (geometry), how to find area
 of surface and cubic contents, 7075
 Cyne, in botany, 6495
 Cynics, views of sect, 5002
 Cynipidae, Gall-wasp family, 5842
 Cynips, oak galls caused by, 5186
 Cyperaceae, plants included in, 6497
 Cyperus, false, flower, 5891
 Cyperus-like sedge, spiked seeds, 946
 Cypress, Italy's familiar tree, 4910
 Cyprus, Mediterranean island, 3420
 ancient vases the forerunners of famous
 Greek vase, 322
 early civilisation, 6987
 flag, in colour, 6967
 Limasol, general view, 3435
 Nicosia, 3430
 Turkish forces marching out, 2083
 map, in colour, 7093
 Cyrenaica, province of Libya, 6754
 salt evaporation pans, 1541
 Cyrene, catacombs at, 444
 excavations at, 6987
 Cyrus the Great, Persian king and con-
 queror, 3102, 6386, 6801
 story of his people's love for him, 4966
 Croesus appeals to, 6799
 Cyrus the Younger, Greek mercenaries
 called in by, 6389
 Cystocaira, granular, seaweed, 3414
 Cytare, what it is, 1935
 Czechoslovakia, Central Europe, general
 description, 4552
 effect of Second World War, 4553
 formation of, 1710
 flags, in colour, 6972
 peasant types, 4566
 scenes, 4564-65
 map, in colour, 7090.
 physical features, 4557
 Czetochowa, Poland, the cathedral, 5036

D

Dab, fish, life-story, with picture, 5105
 Dabchick, its plumage, 4004
 picture, in colour, 3023
 Dace, member of Carp family, 4979
 in colour, facing 5197
 Dachshund, use of, 670
 picture, 668
 Dacia, Rumania's Roman name, 5770
 Daddy-long-legs : see Crane-fly
 Daedalus, story of, 6939
 who was Daedalus ? 3848
 Daemon, classical worship, 3520
 Daffodil, fertilisation, 4779
 member of Amaryllis family, 2566, 2689
 member of genus Narcissus, 6496
 bed of daffodils, 6258
 emperor species, flower, 6383
 in colour, 4908
 Da Fiesole Mino, Italian sculptor, 4524
 Da Foligno, Niccolò, painter, 825
 Da Gama, Vasco : see Vasco da Gama
 Dagenham, Essex, its rapid develop-
 ment, 212
 Dagger, Cave Men's daggers, 196
 Dagnan-Bouveret, Pascal, French
 painter, 2928
 his painting of Justice, 242
 The Blessed Bread, painting, 2925
 Dagon, worshipped by Philistines, 1487
 Daguerre, Louis, French inventor and
 painter, 4749

Dahlia, flowers of various species,
 6378-82
 Dahlia wartlet anemone, in colour, 1553
 Dahna Desert, Arabia, 6262
 Dahomey, French West African colony
 between Gold Coast and Nigeria, 6749
 market-place in Paratau, 6743
 Dahshur, Egypt, discoveries in pyra-
 mids there, 6868
 Dail Eireann, Irish Parliament, 3066
 Daimler, Gottlieb, first petrol engines
 invented by, 4319
 Dairen, port in Manchuria, near Port
 Arthur, 6512, 6620
 Dairy, Finland's dairying industry, 6154
 South Australia's dairy produce, 2574
 Western Australian products, 2576
 milk being examined, 2309
 Daisy, closes at night, 585-86
 how to make paper daisies, 5813
 Luther Burbank's new varieties, 6260
 propagation method, 4413
 flowers of various species, 6259, 6383 ;
 in colour, 4417, 4420.
 pictures, 1919
 Daisy-flowered cup moss, 3408
 Daisy sun-ray anemone, in colour, 1556
 Dakar, capital of French West Africa,
 picture of types, 6748
 Dalai Lama, Tibetan ruler, 6512
 Palace of, at Lhasa, 6517
 Dali, Salvador, French painter, 3046
 Dallin, Cyrus, his sculpture Signing of
 Mayflower Covenant, 5543
 Dalmatia, now part of Yugoslavia, 4558
 Dalmatian dog, 670, 668
 Dalny : see Dairen
 Dalou, Jules, French sculptor, his
 Triumph of the Republic, 4647, 4209,
 Dalton, John, English chemist, 6312
 collecting marsh fire gas, 6315
 Dam, beaver's engineering skill, 1034
 description of famous, 4811-12
 France's great dam at Génissiat, 4173

Pictures of Dams

Aswan, Egypt, 5976
 Bassano, Alberta, 5976
 Bonneville, Oregon, 5602
 Bradford, 4504
 Britain's, series, 4504-06
 Burrinjuck, N.S.W., 5976
 Craig-yr-allt-goch, Wales, 4506
 Dhanauri, India, 5971
 Dnieper, Russia, 6025
 Hniebeestpoort, Transvaal, 5972
 Haweswater, Mardale, 4504
 Hoover, California, 5603, 5975
 Loch Erich, Scotland, 5609
 Makwar, Sudan, 5976
 Murray River, Australia, 5972
 Pen-y-gareg, Wales, 4506
 Roosevelt, Arizona, 5975
 Sukkur, India, 5971
 Tajewala, India, 5971
 Vyrnwy Valley, Wales, 4505
 Da Majano, Benedetto, Florentine
 sculptor and architect, 4524, 6108
 his sculpture of John the Baptist, 4529
 Madonna and Child, sculpture, 4725
 Damascus, Ancient Syrian city, 6270
 St. Paul's journey to, 5808

Pictures of Damascus

busy street scene, 6271
 general view, 3470
 Great Mosque cloisters, 5751
 River Abana, 3463
 street called Straight, 5807
 walls of city, 3470
 D'Ambrosio, Louis, sculptor, his Child
 with Doll, 5133
 Dame, Get up and Bake your Pie,
 rhyme, music and picture, 3571
 Dame Trot, nursery rhyme, 232
 Damghan, Persia, minaret, 6397
 Damien, Father Joseph, Belgian mis-
 sionary hero, 1144
 asking to be sent to help the lepers, 1143
 Da Milano, Giovanni, Milanese painter,
 573
 Damocles, what was the sword of
 Damocles ? 3392
 Damon and Pythias, story, 4365
 picture of return of Pythias, 4356
 story in French, 6814
 Damp, what is the damp-course in a
 building ? 8650

why does damp air make us ill ? 1305
 why is a damp bed dangerous ? 1794
 why is salt damp when it is going to
 rain ? 564
 Dampier, Captain William, English
 navigator, 2379
 exploring Western Australia, 2084
 portrait, 2377
 Damp, Jean, his sculpture Grand-
 mother's Kiss, 4398
 The Prayer, sculpture, 4399
 Dan, Palestine, view, 3467
 Danae, mother of Perseus, 4967
 Dance, George, the Elder, English archi-
 tect, 6470
 designed London's Mansion House, 4230
 Dance, George, the Younger, work on
 London Guildhall, 4230
 Dancer, The, painting by Degas, 3043
 Dancing, our English dances, 6793
 old dances the peasants made, 6792
 sculptured group, 5259
 Dandelion, evergreen plant, 4414
 seeds dispersed by wind, 948
 flower, 4412
 seeds taking flight, 947
 Dandie Dimont, dog, 668
 D'Andrea, Signore, his picture of Daniel
 interpreting a dream, 3102
 Danes, England invaded by, 595, 596,
 2905
 a Dane on the road of Time, 721
 See also Vikings
 D'Angers, David, sculptor, 4647
 Danicus scallop, shell, 1177
 Daniel, Bible story, 3101
 expounding a dream, 3100
 in den of lions, 3101
 interpreting the king's dream, 3102
 Dannhäuser, Jean, sculptor, his Shep-
 herd's Return, 5258
 Dante, Alighieri, Florentine poet, 4581
 Giotto befriended by, 4718
 Italy's debt to Dante, 4784

Pictures of Dante

at a monastery door, 4785
 figure on tomb, 4581
 introducing Giotto, 4719
 statue at Verona, 4926
 tomb at Ravenna, 4922
 with Beatrice, sculpture, 5012
 Danton, Georges, French revolutionary,
 654
 portrait, 647
 Danube, European river, 4545, 4549
 German highway to the East, 4422
 rate of erosion, 2493
 views at Budapest and Orsova, 4561
 winding through mountains, 2498
 Danzig, Free Territory after First World
 War, 5029
 flag, in colour, 6972
 See also Gdansk
 Daphne, Greece, church and monastery,
 5753
 Daphne, nymph, sculpture, 5013
 Daphne and Apollo, painting by Hen-
 rietta Rae, 3525
 Daphnis, mythological Sicilian shep-
 herd, 3530
 D'Arblay, Madame : see Burney, Fanny
 Darby, Abraham, smelter in, 2836, 50
 D'Arc, Jeanne : see Joan of Arc
 D'Arcy, William Knox, founder of a
 great oil company, 4107
 Dardanelles, narrow strait dividing
 Europe from Asia Minor, 1709
 Dare, Virginia, first white child born
 on American continent, and picture,
 2075
 Darenth, Kent, Roman villa, 722-23
 Dar-es-Salaam, port of Tanganyika,
 3314
 scenes, 3321, 3323
 Darien, Isthmus, of, crossed by Balboa,
 1020
 Darius, I, The Great, Persian king, 6388,
 6802
 defeat at Marathon, 889, 4027
 first postmaster-general, 4626
 picture from Persepolis, 6805
 sculptures in his palace, 3891
 Darius II, Persian king, 6389
 Darius III, last Persian king, 6389
 defeat by Alexander, 3129

Darius the Mede, Daniel thrown to the lions, 3102
Dark, why are some people dark ? 4514
 why can we sleep more quickly in the dark than in the light ? 6727
 why can't I see in the dark ? 439
 why do dark things look smaller than light things ? 2664
 why is it dark at night ? 61
 why is it darkest just before dawn ? 564
Dark Ages, from the Fall of the Roman Empire in 475 to the Revival of Learning about 1137, roughly 700 years, 1908, 2153
British Isles in the Dark Ages, 2643
Dark Brahma fowl, 4253
Dark green fritillary, butterfly, with egg, caterpillar and chrysalis, in colour, 6204
Dark green snake, 4619
Dark-winged orchis : see Dwarf orchis
Dark wood violet, in colour, 4907
D'Arlandes, Marquis, balloon ascent, 20
 portrait, 21
Darling, Dr. Fraser, work on speed of birds, 6852
Darling, Grace, English heroine, 4849
 cause of her death, and picture, 1323
 rowing out from lighthouse, 4846
Darling, tributary of the Murray in the interior of Queensland and New South Wales, 6066
Darlington and Stockton Line, first British railway line, 3950
Darling beetle, variegated, in colour, 6336A
Darnel, grass, 583
Darning, how to darn, and picture, 2984
 on net, with picture, 4711
Darnley, Lord, second husband of Mary Queen of Scots, 1082
 portrait, with wife and son, 4134
Dart, Professor, discoveries during search for missing link, 2539
Dart, Devonshire river, scenes, 841, 843
Darter, bird, habits and food, 3748, 3749
Dartford warbler, rare bird, 3138
 in colour, 2897
Dartmoor, Devonshire, description, 210, 468
Dartmouth, Devonshire, harbour, 347
Darts, game, how to play, with picture, 5440
Darwin, Bernard, English writer, grandson of Charles Darwin, 3830
Darwin, Charles, English naturalist, 3830, 5576
 discovered that herons distribute water-lily seeds, 3870
 experiment with seedlings, 580, 943
 importance of small changes in living creatures, theory, 1204
 portrait, 5568
Darwin, Sir George, traced influence of the Moon on tides, 3478
Da Settignano, Desiderio, Florentine sculptor, 4523
Dasya, scarlet, seaweed, 3416
Dasyure, spotted native cat, 2395
Date, palm's life story, 1935
 amount of fruit yielded, 1935
 cultivation, 1436
 clump of palms in Egypt, 1939
 gathering the fruit, 1935, 1938, 1939
 palm, in colour, 2688
 young tree loaded with fruit, 1938
Date line, what it is, 814
Daubigny, Charles François, French landscape painter, 2790
Pictures by Daubigny
 Boats on the Oise, 2774
 Sunset, 2795
 The Water Gate, 3774
Daudet, Alphonse, French novelist and humorist, 4458
D'Aulnoy, Madame, French story-writer, and portrait, 399
Daumier, Honoré, French painter, 3041
Davenport, world's first long-wave broadcasting station, 5107
David, Jewish king, story, 1860, 1985
 psalms of David, 2109, 2929
 palace at Jerusalem, 5378
 son of Jesse, 1820
 statue by Donatello, 4523
 statue by Michael Angelo, 4534, 6184

Pictures of David
 as a shepherd boy, painting by William Bouquereau, 1984
 holding sword of Goliath, 1984
 looking out from his palace, 1985
 playing harp, Saxon psalter figure, 1925
 playing harp to Saul, 1861
 putting on armour of Saul, 1987
 Saul discovered asleep, 1857
 sculpture by Donatello, 4530, 4899
 sculptures by Michael Angelo, 69, 72, 4728
 sculpture by Verrocchio, 4530
 statue by Bernini, 5007
 taunted by Goliath, 1987
 tomb at Jerusalem, 3468
 waiting for tidings of Absalom, 1984
 with Jonathan, 1856
David, Gerard, Flemish painter, 1057
 Adoration of the Child, paintings, 1054
David, Jacques Louis, French painter, 1803

Pictures by David
 Defence of Thermopylae, 3121
 Mme. Récamier, 1807
 M. Seriziat, 1802
 Napoleon's coronation, 1805
 Pope Pius VII, 3657
David, T. W. E., Antarctic explorer, 6554
David, St., patron saint of Wales, 2785
David Copperfield, novel by Charles Dickens, 2014, 2848
Davidson, John, British poet, 4081
 See also Poetry Index
Davies, William Henry, English poet, 4082
 See also Poetry Index
Da Vignola, Barozzi, Italian architect, 6111
Da Vinci, Leonardo: see Leonardo da Vinci
Davis, H. W. B., his painting of a mare and foal, 1903
Davis, John, English navigator, 776, 4601
 Falkland Islands discovered, 3558
Davis, Mary, portrait by Sir Peter Lely, 1926
Davis, Thomas : see Poetry Index
Davis Strait, divides Baffin Land from Greenland, 4601
Davy, Sir Humphry, English chemist, invented the safety lamp for use in mines, 5328
 discoveries and inventions, 1097
 electrical discovery, 482
 electro-chemical pioneer, 6313
 ridiculous coal gas as illuminant, 3333
 making first experiments, 5329
 portrait, 5323
Dawson, man who ran first steamship on the Thames, 3736
Day, due to Earth spinning, 16, 266
 length varies in different places, 2742
 story of the days, and pictures, 5220

Wonder Questions
 has the day always been divided into twenty-four equal hours ? 2298
 what is a day ? 5121
 where does the day begin ? 814
 which are the longest and shortest days ? 5863
 who arranged the days ? 2295
 why are some hotter than others ? 5000
Daylight Saving, what is it ? 5981
 See also Summer Time Act
D-Day, in Second World War, 1943, 4050
Dead centre, in engineering, 3212
Dead man's handle, what it is, 2665
Deadly nightshade, dwale, or belladonna, atropine obtained, 2890, 4290
 danger of berries, 5285
 flower, 2691, 4290; fruit, in colour, 3671
Dead-nettle, not stinging nettle, 4283
 flowers, in colour, 4286-87, 4906
Dead Sea, Lake in Palestine, 6288, boiling point of water, 5387
 minerals obtained from, 6269
 why men cannot sink in, 6720
 view, 3465
Deaf, electronic device aids, 2715
Deafish, in colour, facing 5098
Dearmore, Canon Percy, English hymn-writer, 1780

Death, should we be afraid to die ? 6105
Monument to the Dead, by Bartholomé, 5136
Death Duty, what it is, 4659
Death of Conor, story and picture, 3863
Death's head moth, bee's enemy, 5840, 6212
Death-tick beetle, description, 6333
 Westminster Hall roof damaged by, 6333, 6329
De Baudricourt, Robert, helped Joan of Arc, 2262
De Beer's diamond mines, 3187
De Benalcázar, Sebastian, Spanish conqueror in South America, 7000
Deben, River, Suffolk, excavation of an Anglo-Saxon burial ship near, 6998
De Bivar, Rodrigo Diaz : see Cid, The
Deborah, influence over Israelites, 1365
De Bort, Teisserenc, experiments with sounding balloons, 5372
De Brosse, architect of the Luxembourg, 6358
Debt, punishments in olden times, 4774
 reparations after 1st World War, 1924
De Burgh, Hubert, his patriotism, 3343
Debussy, Claude Achille, French composer, 150
Debye, his work on X-ray crystal analysis, 2594
Decameron, Boccaccio's tales, 4583
Decamps, Alexandre, French painter, 1808
Decan, region of India, 2810
December, origin of name, 5341
December moth, with caterpillar, in colour, facing 5935
De Cervantes : see Cervantes
De Chardonnet, Hilaire, artificial silk made from cellulose by, 5364
Decius, Roman emperor, portrait, 2879
Declaration of Independence, adopted in U.S.A., 1638
American liberty proclaimed, 3794
 room where declaration was signed, 3689
Declaration of Rights, English Constitution is largely based on, 1214
Declination, magnetic, variation in magnetic storms, 362
Decline and Fall of the Roman Empire, Gibbon's masterpiece, 1785, 3094
Decoration, house decoration made from a carrot, 2611
 making party decorations, 6669
De Curzon, Alfred, his Psyche, 3523
Dedham Mill, Constable's painting, 2304
Dee, River, Aberdeenshire, view near Balmoral, 4975
Deeplet anemone, in colour, 1553-4
Deer, big animal family, 1397
 eagle torn attacking a roebuck, 3631

Pictures of a Deer
 fallow deer in English park, 1401
 herd, 1981
 Monarch of the Glen, by Landseer, 2556
 musk deer and chital, 1403
 prehistoric drawing, 192
 red deer, 1399
 stag fight, painting by Courbet, 2925
 See also under separate names
Deerhound, 668
Deerslayer, The, novel by Fenimore Cooper, 332
Deer-stalking, game, 2808
Dee's Disk, what it is, 2418
Defence of Lucknow, picture, 4797
Defoe, Daniel, English novelist and political writer, 1480
 pilloried at Temple Bar, 1481
De Forest, Dr. Lee, American inventor, improved the wireless valve, 2096, 2218, 3364
Degas, Edgar, French painter, 3042
 his painting, The Dancer, 3043
De Gasperi, Alcide, Italian statesman, 4916
De Gaulle, General, French leader 1945, 4050
DeGeorge, Charles, his sculpture, Aristotle as a boy, 5014
Deger, Ernst, Christ's entry into Jerusalem, painting, 4461
De Gerlache, Adrien, Belgian Antarctic explorer, 6551; portrait, 6549

De Glehn, W. G., English artist, 2677
 De Havilland, Sir G., pioneer airman and aeroplane manufacturer, 4111
 portrait, 4102
 De Havilland aeroplane, building the Mosquito military plane, picture series, 6337-42
 De Herrera, Fernando, Spanish lyric poet, 5056
 De Herrera, Juan, Spanish architect, 6272, 6679
 Dehiscence, in botany, 6495
 De Hooch, Pieter, Dutch painter, 1428
 Dutch courtyard, painting, 3779
 Dehydration, what are dehydrated foods ? 2663
 Deimos, moon of Mars, 3237
 De Jussieu, Bernard, French botanist, 3391
 Dekker, Thomas : see Poetry Index
 De la Barca : see Calderon de la Barca
 De la Bruyere, Jean French philosophical writer, 4255
 Delacroix, Eugène, French painter, 1806
 influence on French landscape painters, 2789
 monument by Dalou, 4648
 stained-glass windows designed by, 6731
 De La Mare, Walter, English poet, 4082
 portrait, 4077
 See also Poetry Index
 Delaroche, Paul, French painter of the romantic school, 1808
 Pictures by Delaroche
 Death of Cardinal Mazarin, 1807
 Napoleon crossing the Alps, 1456
 Queen Elizabeth dying, 1080
 The Princes in the Tower, 1807
 Virgin and Child, 3656
 De la Tour, Quentin, French portrait painter in crayon, 1689
 De la Vega, Garcilaso, Spanish historian of Peru, 5056
 Delaware, American State, flag, in colour, 6970
 Delaware River Bridge, U.S.A., 554
 Del Cano, Sebastian, Spanish navigator, 774
 Del Cavaliere, Emilio, his oratorio, The Soul and Body, 5869
 Delessaria, seaweed, species, 3413-6
 De Lesseps, Ferdinand, French diplomat and engineer, 4868
 Delft, Holland, architecture of town hall, 6371
 pottery made in 17th century, 6737
 new church, 5538
 Delhi, capital of the Dominion of India, 2811
 famous buildings, 2821
 founded by Shah Jehan, 5627
 Government buildings, 6611
 siege during Indian mutiny, 2947
 Pictures of Delhi
 Council House, 2951
 Government buildings, 6614
 Kutal minar, 5634
 modern buildings, 2949
 modern Hindu temple, 2955
 Pearl Mosque, 2279
 praying tower, 2955
 Shah Jehan's palace, apartment, 5633
 Delilah, betrayal of Samson, 1488
 Samson telling the secret of his strength, 1487
 Delius, Frederick, British composer, 150
 Della Francesca, Piero, Italian painter, 825
 portrait of lady, 572
 Della Robbia, Andrea, Florentine sculptor, 4533, 4720
 little child, 4528
 Madonna and Child, 4899
 the Visitation, 4528
 Della Robbia, Giovanni, terracotta sculpture, 4528
 Della Robbia, Luca, Florentine sculptor, 4729
 splendid terracotta work, 4524, 4533
 angel in relief, 4531
 angel in Santa Croce, Florence, 4721
 portrait, 4715
 Singing Gallery, Florence, 4527, 4532
 De Long, George Washington, American Arctic explorer, 6438

De l'Orme, Philibert, French architect, 6360
 Delos, house of Cleopatra, ruins, 6991
 sculptures from Greek island, 4032
 Delphi, Nero carried off 500 statues, 4404
 why was Delphi famous ? 5366
 Delphinium : see Larkspur
 Del Piombo, Sebastian, Venetian painter, 934
 his painting, La Fornarina, 939
 Del Sarto, Andrea, one of the most famous Florentine painters, 820
 his painting, the Madonna, 1663
 St. John the Baptist, 824
 Delta, how is a delta made ? 1679
 Deltoid-leaved orache, 5782
 Deluge, The, Bible story of, 376
 Greek story of, 3531, 4266
 Poussin's picture in the Louvre, 1682
 pictures, 374, 376
 tablet from Nineveh, 6863
 Demand and Supply, prices governed by, 5513
 De Mariana, Juan, Spanish historian, 5555
 De Medici : see Medici
 De Mendoza, Diego, Spanish novelist and historian, 5056
 De Mendoza, Pedro, founded Buenos Aires, 7000
 Demerara, river of British Guiana, yellow fever's heavy toll, 2626
 Demeter, or Ceres, goddess of ancient Greece and Rome, 3516, 4362, 6819
 statue found at Cnidus, 6987
 mourning Persephone, sculpture, 4275
 Demetrius, in Shakespeare's Midsummer Night's Dream, 6294
 Demetrius Poliorcetes, king of Macedonia, coin, 5391
 Democracy, spirit in Middle Ages, 3638
 its beginning, 3122
 Democrates, designed temple of Diana at Epheus, 5498
 Democritus, Greek philosopher, theory about the atom, 883
 Demoiselle crane, bird, 3873
 De Molina, Tirso, Spanish playwright : see Tellez
 Demon star, 3854
 Demont-Breton, Virginie, her painting, Grandmother, 3655
 De Montfort, Simon, English statesman, patriot, and general, 840
 riding into Rochester Cathedral, 839
 De Morales, Luis, Spanish religious painter, 1307
 De Morgan, Jacques, French Egyptologist, found treasure of the Dahshur pyramids, 6868
 De Morgan, Professor, on squaring the circle, 4266
 De Morgan, William Frend, English novelist, 3712
 Demosthenes, greatest Athenian orator, 3126
 addressing men of Athens, 3125
 portrait, 3119
 Denbigh, capital of Denbighshire, Denbigh Castle, 961
 Dendera temple, column, 5374
 reliefs on wall, 5374
 Denmark, Scandinavian kingdom, 5148
 literature, 4938
 Nelson seizes fleet at Copenhagen, 1454
 national flags, in colour, 6972
 railway engine, 3510
 scenes, 5147, 5164-65
 Maps of Denmark
 general and political, 5162
 map, in colour, 7086
 showing historical events, 5163
 Denny, William, early steamship built by, 3736
 Denny, Richard Molesworth : see Poetry Index
 Density, of matter, 393
 Dentist, X-ray apparatus used by, 2593
 Deodar tree, species of cedar, 3789
 De Orellana, Francisco, Spanish adventurer, 7000
 Depression, on weather maps, meaning of, 6721
 Deptford pink, flower, in colour, 4286
 De Quincey, Thomas, English author and essayist, 2870

Tartar retreat described, 1533
 portrait, 2969
 De Quiros, Pedro, Portuguese navigator, 2378
 Derain, André, French artist, 3046
 Derby, capital of Derbyshire, arms, in colour, 4990
 Florence Nightingale statue at, 3983
 Derbyshire, county of England, description, 214
 places in, 7156
 road map, 7149
 De Recalde, Inigo Lopez : see Loyola
 De Redcliffe, Lord Stratford, help given to archaeologists by, 6987
 Dér-el-Bahari, wonderful temple built by Queen Hatshepsut, 5380
 excavated by Mariette, 6860
 rock temple, 5386
 De Rivera, General Primo, dictator of Spain, 5276
 Dermis, meaning of word, 1430
 Dermot, story of, 533
 De Ros, Baroness, coat-of-arms, 4987
 De Rossi, Giambattista, Italian archaeologist, 6994
 De Rozier, Pilâtre, ascent in Montgolfier balloon, 20, 21
 De Rueda, Lope, first famous Spanish dramatist, 5056
 De Ruyter, Michael, the greatest Dutch admiral, 2889, 5530
 climbing church steeple as a boy, 2884
 monument at Flushing, 5539
 De Sacy, Sylvestre, French orientalist, work on deciphering Rosetta stone, 6860
 De Sarzec, Monsieur, French archaeologist, excavates site of Lagash, 6870
 Derwentwater, lake, Cumberland, 1832
 Derzhavin, Gabriel, one of the first Russian poets, 4816
 Descartes, René, French philosopher and scientist, 4455, 4841
 thought pineal gland to be the seat of the soul, 3175
 portrait, 4453
 Desdemona, in Othello, 6164, 6167
 Desert, story of the deserts, 2370
 area and character of desert belts, 2126
 rainless areas of the Earth, 2620
 Pictures of Desert Scenes

Arab encampment round wells, 6261
 camel caravan in Palestine, 2371
 camels on the march, 2125
 desert mirage, 441
 Sahara scene, 2371
 Salton Sea, California, 2371
 scenes showing camel's life, 1529
 See also names of Deserts
 Desert Fox, 536
 Desert monitor, reptile, 4492
 Deshinef, Simon, Siberian explorer, 4602
 Designs, card that makes, 1865
 Desman, animal, characteristics, 296
 Desmids, found in lakes, 1068
 Desmodium, leaves always moving, 82
 Desmodus : see Vampire bat
 Dessau, Germany, its School of Arts and Crafts, 6612, 6616
 D'Este, Beatrice, monument at Pavia, 6110
 Destiny, men's name for direction, 619
 Detroit, city in Michigan, U.S.A., famous for motor-cars, 3677
 Grand Circus Park, 3803
 motor works, 3679
 Deucallion, mythological Noah of Greece, 3531
 De Urdaneta, Andreas, crossed the Pacific, 776
 De Valdivia, Pedro, Spanish occupation of Chile, 7000
 De Valera, Irish leader, 1925
 Devanagari, method of writing, 4391
 De Vega, Lope, Spanish poet and dramatist, 3242
 his Romeo and Juliet in verse, 4387
 wrote nearly 2000 plays, 5058
 Deventer, town of Holland, view, 5538
 Devereux, Robert, Earl of Essex, Bacon condemns, 4840; portraits, 1077, 1927
 Devil-fish, or Eagle-ray, 5096
 Devil's bit scabious, plant, 5020
 member of genus Scabiosa, 1493
 flower, in colour, 5141

- Devil's coach-horse**, beetle which eats garden pests, 6331
in colour, 6336
- Devil's Jumps**, near Hindhead, Surrey, 469
- Devonian Age**, what the Earth was like in the, 1133
- Devonshire**, south-western county of England, characteristics of cattle, 1154
clay for making china, 301
geology, 1136
places in, 7156
breed of cattle, 1160
road map, 7120-21
- De Vries, Hugo**, Dutch botanist, on Luther Burbank's work, 1204
- Dew**, frozen, 2886
quaint use suggested, 4445
what is a dew pond? 3890
frozen on foliage, 4502
- Dewar, Sir James**, Scottish chemist, attempts to reach absolute zero, 5320
experiments with air, 4100, 5319
- Dewberry**, of genus *Rubus*, 6492
new kind of fruit produced, 1202
wild fruit, in colour, 3667
- Dewdrop**, what holds it in place? 5735
on leaf, 4502
- Dewing, Thomas**, American decorative painter, 3288
- De Wint, Peter**, English landscape painter, 2425
Bray-on-Thames, painting, 2422
landscape, 2423
- De Worde, Wynkyn**, English printer, Caxton's assistant, 1517
- Dew-point**, temperature, 2865
- Dew pond**, what it is, 3890
- Dexter**, its meaning, 924
- Dexter cattle**, Irish breed, 1154
- Dhanauri**, India, dam, 5971
- Diabetes**, disease explained, 3176
insulin cure, 3176
- Diadem pimplet anemone**, in colour, 1554
- Diadumenianus**, Roman emperor, portrait, 2879
- Diadumenus**, statue of athlete by Polyclitus, 4140, 4148
- Diamond**, Antwerp's diamond-cutting industry, 1227
artificial diamonds made in electric furnace, 1227
- De Beers mines** at Kimberley, 3187
diamond-cutting at Amsterdam, 5530
for pen points, 2034
found in meteors, 3280, 3608
reason for brilliance, 5937
South-West African industry, 3188
story of a diamond, with pictures, 6718
Tanganyika's production, 3315
are there diamonds in the sky? 3280
picture of a diamond, 1301
- Diamond Jubilee**, what it is, 6849
- Diana**, goddess of antiquity, 3516
temple at Ephesus, 4395, 4884, 5498
- Diana Resting in the Woods**, painting by A. Wardle, 3526
sculptured fragment of temple, 4402
sculptures, 4400, 4653
temple at Evora, Portugal, 5144
- Diana**, in All's Well that Ends Well, 6043
- Diana**, romance by Montemayor, 5059
- Diana of the Uplands**, picture by C. W. Furse, 2545, 3655
- Dianthus**, genus of order Caryophyllaceae, 6492
- Diaphragm** (anatomy), muscles always in action, with picture, 1317
- Diary**, famous writers of diaries, 1849
Pepys' diary published 156 years after completion, 1849
- Diatom**, one-celled plant, found in lakes, 1068
on floor of the ocean, 2495
oxygen supplied to sea, 4856
what diatoms are, 702
under microscope, 1065, 1909, 1913-15
- Diaz, Bartholomew**, Portuguese navigator, 772
superseded by Vasco da Gama, 774
Cape of Good Hope discovered, 777
- Diaz de la Pena, Narcisse**, French landscape painter, 2790
his painting, *The Storm*, 2796
- Dibdin, Charles**, English writer of sea songs, 1262, 1261
See also Poetry Index
- Dick, Sir William Reid**, Scottish sculptor, 4768
- Dickens, Charles**, English novelist, 2012
his novels, 2847
grave in Poets' Corner, Westminster Abbey, 2014, 2849
Sketches by Boz, his first success, 2014
value of his stories, 1584
worked in a blacking factory, 2012
wrote *The Ivy Green*, 1264
- Pictures of Charles Dickens**
as a young man, 2009
in middle age, 2009
portrait, with parents, 4132
with some of his characters, 2013
writing in his study, 2847
See also Poetry Index
- Dickinson, Emily**, American poet, 2851, 4204
See also Poetry Index
- Dickinson, Patric**, British poet, 4084
- Dicksee, Margaret**, her paintings :
Dean Swift and Stella, 1729
Sir Thomas Lawrence as a boy, 5695
Dicky show a light, game, 3108
- Dicotyledon**, its first appearance, 1636
sub-classes, 6490
what dicotyledons are, 705, 6489
- Dicotylous**, fennel-like, seaweed, 3414
- Didcot**, Berkshire, atomic research station, 4814
- Diderot, Denis**, French philosopher, favoured drastic political changes, 647
portrait, 647
- Dido**, who was Dido? 4639
hearing the tale of Troy, 5553
- Diemen, Van** : see Van Diemen
- Dieppe**, naval raid on during Second World War, 1945
- Diesel, Rudolf**, German engineer, heavy-oil engine invention, 4330
- Diesel engine**, what it is, 4330
increasing use of Diesel-electric engines on railways, 3952
- Diesel-electric engine**, 4075
of the liner *Britannic*, 3706
- Diet**, origin of word applied to a parliament, 6856
- Diet of Worms** (1521), where Charles V called on Luther to recant, 7055
- Differential gear**, of motor car, 4328
and back axles being assembled, 3762
- Diffusion**, what it means in Physiology, 1322, 5006
See also Breathing
- Digestion**, processes in stomach, 2061
effect of sodium chloride in the blood, 1064
meat as an aid, 2558
slow eating aids digestion, 1932
time-table for various foods, 7068
white cells enter blood during, 1062
- Digger**, mechanical, pictures, 3031-34
- Digger**, tawny, insect, in colour, 5714
- Dignity and Impudence**, Landseer's famous painting, 2543
- Dijon**, capital of Burgundy, France, famous tombs in museum, 4644
- Dik-dik**, animal, characteristics, 1400-
- Dilated liverwort**, flowerless plant, 3408
- Di Lorenzo**, Florenzo, Italian painter, 825
- Dilwarra Temple**, India, 5626
- Dimple**, what makes a dimple? 564
- Dimsdale**, Marcus Southwell, on Ovid, 5431
on Plautus, 5426
on Roman mimes, 5427
- Dinan**, Brittany, ramparts, 6358
street scene, 4180
- Dinant**, Belgian town, 5646
cliff-top fortress, 5656
- Dinaric Alps**, Hungarian mountain range, 4550
- Ding, Dong**, Bell, rhyme, picture, 1964
- Dingle Bay**, Ireland, 3062
- Dingo**, Australian wild dog, 664, 541
- Dingy skipper butterfly**, with egg, caterpillar, and chrysalis, in colour, 6206
- Dining out**, game, 5686
- Diniz**, Portuguese farmer king, 5398
- Dinner at the Castle**, story, 3864
- Dinner at the Inn**, story, 2634
- Dinoceras**, prehistoric horned animal of Eocene Age, 1756
- Dinornis**, extinct bird, 5575
- Sir Richard Owen** with skeleton, 5577
- Dinosaur**, disappearance from Earth, 11
in Triassic times, 1384
its size and food, 4489
picture, 1381
- Dinotherium**, mammal of Tertiary period, 11
where it lived, 1756
- Diocletian**, last great Roman emperor, 2881
and St. George, 2785
catacombs closed at his order, 444
portrait, 2879
- Diogenes**, Greek cynic philosopher, why did he live in a tub? 5002
living in his tub, 5003
- Dionysius**, king of Sicily, his exile, story, 3370
how Damon and Pythias became his friends, story, 4365
story of Damocles, 3392
- Dionysius Exiguus**, proposed that Christians should date all events from Christ's birth, 2295
- Dionysius Thrax**, Greek grammarian, 3120
- Dionysus**, Greek god of countryside, 3517, 5181
Pythagoras and god of folly, 1040
theatre at Athens for 30,000 people, 5502
- Diphtheria**, children's lives saved by anti-toxin treatment, 2628
- Diplodocus**, prehistoric animal, 646
skeleton, 453
- Diplodocus Carnegii**, 6727
- Diplomatic officials**, flag, in colour, 6966
- Dipper**, bird, in colour, 2766
- Dipper**, mechanical excavator, 3034
- Dipper shell**, 6581
- Diptera**, two-winged insects, 6084
- Dipterus**, prehistoric creature, 1135
- Dirac, Professor P. A. M.**, of Cambridge, modern theory about light, 5690
- Dirck Hartog's Island**, in Western Australia, 2378
- Direction**, the soul of living, 617
finding direction by wireless, 3575
bird's sense of direction, 617
- Directional wireless**, discovered by Bellini and Tosi, 2096
- Directory**, The, French republican government, 564
- Dirt**, how does soap remove dirt? 4268
- Disabled People**, employment of, 6256
- Disc**, what it is, 942
- Disciples**, the story of the Twelve, 6737
flight from Jerusalem after Crucifixion, 1788
- Jews refuse to believe their story**, 1905
- Disc jelly-fish**, 6697
- Discobolus**, famous statue by Myron, 4142, 4141
- Discontented Fir Tree**, story and picture, 4731
- Discord**, meaning of term, 6303
produced by interference in sound waves, 6429
- Discordia**, goddess of discord, 3519
- Discovery**, the world's discoverers, 769
spirit of discovery in Tudor times, 1076
for list of most important discoveries and inventions, with their dates, see 7062-65
- Discovery**, Captain Scott's exploration ship, 6552
- Disease**, men who have conquered disease, 2623
immunity, 4758
plants as remedies, 1438
virus in, 4017
white blood cells fight against, 1060
- Wonder Questions**
are we creating new diseases? 3651
do diseases ever disappear? 2920
what is the Isle of Wight disease? 5492
why are some diseases infectious? 2786
- Disraeli, Benjamin**, Earl of Beaconsfield, statesman and novelist, 2137
as novelist, 3580
false prophecy concerning British colonies, 1588
portraits, 2133, 3579
portrait, with parents, 4135

- Dissard, Clémentine**, her sculpture of a young football player, 5133
- Dissenters**, extension of civic rights in 19th century, 1585
- Distaff**, stick on which wool was wound in spinning, Syrian women with distaffs, 233
- Distance**, a talk about, 743
definition of space, 861
measuring distances by sound, 2113
metre as a unit, 4834
symbolical picture, 743
- Ditch**, mechanical ditch digger, 3034
- Ditch skater**, under microscope, 1915
- Diurnal**, what adjective means, 6233
- Di-valent**, chemical term, 4347
- Diver**, bird's characteristics, 4004
in colour, 2900
black-throated species, 4003
red-throated, in colour, 2766
- Di Vernon**, in Scott's Rob Roy, 2722
- Dividers**, for technical drawing, 6352
- Divine Comedy**, The, Dante's greatest poem, 4582
- Diving**, picture story, 6587
Brave Diver of Tor Bay, story, 6935
how to stay under water as long as possible, 1322
how to swim and dive, with pictures, 5191
weight of a diver's equipment, 6588
why do we rise to the surface when we dive? 5618
why must a diver have lead on his boots? 815
diver leaving boat, 917
evolution of the diving suit, 6594
four kinds of diving suits, 6592
gathering sponges in Florida, 918
picture series, 6587-94
- Diving-bell**, picture story, 6593
- Division of labour**, meaning of, 5016
- Dixmude**, town of Belgium, public square, 5654
- Dixon, Arthur**, his picture, Truth at the Bottom of the Well, 495
- Dixon, Richard Watson**, English writer and poet, 4079
- Dizful**, Arabistan, general view, 6394
- Dizziness**, why does everything spin round when we are dizzy? 6231
- Djenne**, French Sudan, mosque, 6761
- Dobrudja**, Rumanian province, 5772
- Dobson, Frank**, English sculptor, 4768
his sculpture, Figure for a Fountain, 4767
- Dobson, Henry Austin**: see Poetry Index
- Dobson, William**, English portrait and historical painter, 1928
his portrait of Endymion Porter, 1927
- Dock**, member of genus Rumex, 6496
turkey rhubarb a relation, 2684
- Docks and Inland Waterways Executive**, canals controlled by, 4886
- Doctor**, first great surgeons and physicians, 2501
great conquerors of disease, 2623
Greek doctors work recorded and translated, 2504
hope now part of his medicine, 2106
State school, 6255
why has a doctor a red lamp at his door? 4520
- Doctor Faust**, story, 4696
- Doctor Faustus was a Good Man**, rhyme, music, and picture, 4571
- Doctor in Spite of Himself**, story, 4965
- Doctor who Learned to Swim**, story, 4854
- Dodder**, feeds on other plants, 206
- Dodds, Eric Robertson**, British poet and writer, 4084
- Dodecanese Islands**, Aegean Sea group, Greece receives from Italy, 4909
- Dodge, Mary Mapes**: see Poetry Index
- Dodgson, Charles Lutwidge**: see Carroll, Lewis
- Dodo**, extinct bird, 2642, 4120, 4119
- Dodona**, forest in Greece, 3531
- Dog**, domesticated, 663
Amundsen's Antarctic transport, 6558
ancient Egyptians' hunting dogs, 427
care of your dog, with picture, 2733
descended from wolf or jackal, 540, 663
domestication, 538, 540
examples of intelligence, 669
first friend of man, 538
kennel, puzzle, 5195, 5314
making a dog kennel, and picture, 756
speed of a greyhound, 6852
are there dogs which cannot bark? 5366
why does a dog bury its bone? 2042
why does a dog go round before it lies down? 1795
why is it difficult for dogs to keep cool? 1433
- Pictures of Dogs**
members of a great family, series, 665-8
dog flea, under microscope, 1913
Eskimo dogs, painting, 663
See also Dog tribe
- Dog**, wild, big animal family, 537
American bush dog, 542
crab-eating species, 542
destructive Australian dingo, 664
- Pictures of Wild Dogs**
bush dog of Guiana, 536
Cape hunting dog, 536
crab-eating dog, 541
Siberian wild dog, 536
Tibetan wild dog, 541
See also Dingo; Dog Tribe
- Dog and the Ass**, fable, 3744
- Dog and the Shadow**, fable, 4116
- Dog and the Thief**, fable, 4246
- Dog and the Wolf**, fable, 5990
- Dogberry**, in Shakespeare's Much Ado About Nothing, 6047
- Dog daisy**: see Ox-eye daisy
- Doge of Venice**, title equivalent to duke, 271
picture by Giovanni Bellini, 72
- Dog-fish**, species of shark, 5227, 5229
in colour, 5099
- Dogger Bank**, North Sea fishing ground, 5106
- Dog in the Manger**, fable, 4246
- Dog rose**, uses of berries, 4284
what it is like, 4284
flower, in colour, 4285
fruit, in colour, 3672
- Dogs, Cats, and Mice**, story, 6684
- Dog kennel**, puzzle, 5194, 5314
- Dog's Mercury**, flower, 4778
- Dog's tail grass**, use as fodder, 2186
crested species, 3307
- Dog star**: see Sirius
- Dogs that Became Friends**, story, 156
- Dog that Became an Angel**, story, 2016
- Dog that did its Duty**, story, 6932
- Dog tribe**, adaptability to surroundings, 542
cat tribe not so intelligent, 538
characteristics, 537
See Dog; Jackal; Wolf; and so on
- Dog Violet**, heathland flower, 5023
flower, in colour, 4285
- Dogwood**, wild fruit, in colour, 3666
swamp species, winged seeds, 947
- Doiben**, Digby Mackworth, British writer and poet, 4079
- Dolci, Carlo**, Florentine artist, his Madonna and Child, 1664
- Doldrums**, what are they? 5491
- Dolgelly**, capital of Merionethshire, view showing Cader Idris, 1462
- Dolichotoma**, splendid, beetle, in colour, 6336A
Doll, how to make a doll's house, with pictures, 4093
how to make dolls from clothes-pegs, with picture, 2609
how to make dolls from pipe-cleaners, with picture, 4589
how to make furniture for doll's house, with pictures, 5070
how to make John Chinaman of peanuts, with picture, 1000
- Dollfus, Dr. Engelbert**, Chancellor of Austria, 4549
- Dollman, J. C.**, his paintings. A Very Gallant Gentleman, 6553
Daniel and the Lions, 3101
The Miser, 2851
- Dolmen**, tomb made by Bronze Age men, 315
origin of, 6997
- Dolomites**, Italian mountain group in Trentino, coral mountains, 518
- Dolphin**, characteristics, 2149
first appearance, 1887
story of Pelorus Jack, 2152
Elliott dolphin, 2147
- leaping from sea, 2145
Pelorus Jack, 2151
- Domesday Book**, record of estates prepared for William I, 708
box made to hold it, 4859
in Record Office, 4859
- Domestic cockroach**, in colour, 5713
- Domestic mite**, insect, 5599
- Domett, Alfred**: see Poetry Index
- Domingo, San**: See Dominican Republic
- Dominic, St.**, Spanish monk, 1387, 1385
- Dominica**, largest of the Windward Islands, 3555
- Dominican Republic**, or Santo Domingo 7022
flag, in colour, 6972
map, general, 7030; in colour, 7103
Dominooes, games played with, 1388
- Domitia Longina**, wife of Domitian, portrait, 2878
- Domitian**, Roman emperor, 2878
- Domitilla, St.**, catacomb at Rome, 444
- Domodossola**, town of Italy, 4910
- Dom Pedro**, emperor of Brazil, amazed by telephone, 1847
- Donatello**, Florentine sculptor, 4723
influence on modern sculpture, 4895
lovely Singing Gallery at Florence, 4523
- Pictures of Donatello's Sculptures**
Annunciation, in Florence, 4725
Childhood, 4897
David, 4530, 4899
Gattamelata statue, 4531
happy children, 4526
John the Baptist, 5256
portrait, 271
St. Cecilia, 5256
St. George, 4529
Singing Gallery, Florence, 4527-29, 4532
statue, 4715
young child's head, 4531
- Donegal Hills**, Irish mountain range, 3061
view in, 3071
- Don John**, in Shakespeare's Much Ado about Nothing, 6047
- Donkey**, how can a donkey eat a thistle, thorns and all? 4762
making one, game, 3472
carrying load in Portugal, 1897
carrying Portuguese woman, 1899
plough team, 1895
transport in Persia, 89
See also Ass
- Donkey's Wish**, fable, 3745
- Donne, John**: see Poetry Index
- Don Pedro**, in Shakespeare's Much Ado about Nothing, 6046
- Don Quixote**, Cervantes' novel, 5057
- Don Quixote**, and Maritornes, painting by Roland Wheelwright, 3779
- Doom of the Children of Lir**, story, 6687
- Doon**, Ayrshire river, scene, 1337
- Door**, why are the doors of rooms generally in a corner? 5372
- Dora**, Sister, her life-story, 6824
attending a patient, 1109
- Dor beetle**, in colour, 6336
- Dorcasomus beetle**, in colour, 6336A
- Dorchester**, capital and market town of Dorset, Maumbury Rings, 5504
arms of town, in colour, 4990
beam wireless station, 2097
- Dordogne**, French river, prehistoric remains in valley, 1880
locks on canal, 4878
- Dordrecht**, Dutch port, architecture of cathedral, 5992
scenes, 5536, 5538
- Dorians**, Aegean civilisation destroyed by their invasion, 4024
- Doric art**, aim to produce wonderful athletic forms, 4138
blending with Ionic art produced the golden age, 4024, 4138
- Doric column**, considered most perfect feature in architecture, 5498
in Greek architecture, 5497
- Dorking**, Surrey, High Street, 1591
scene in Glory Woods, 1590
- Dormouse**, characteristics, 1035
species with spines in its coat, 1031
- Dorothy Perkins rose**, flower, 6384
- Dörpfeld, Dr. Wilhelm**, explains architecture of Troy, 6987

- Dorset**, southern English county, coral reefs, 1508
cretaceous mud, 1633
places in, 7157
plesiosaurus found at Lyme Regis, 1508
oil-drilling apparatus used in, 3086
road map, 7117
Dorset horned sheep, 1284, 1281
Dortmund, Germany, 4426
Dortmund-Ems Canal, German waterway, 4868
Dory, fish, in colour, 5099
Doryphorus, statue by Polyclitus of an ideal athletic form, 4140, 4148
Dostoyevsky, Feodor, Russian novelist, 4819; portrait 4815
Dothan, Joseph's well, 3466
Dotterel, bird, in colour, 3023
Dou, Gerard, Dutch painter, 1428
his portrait of himself, 3779
Young Mother, painting, 1427
Double-acting steam-engine, how cylinder works, 3209
Double clematis, flower, 6378
Double-collared aracari, in colour, 3141
Double-cushia, flower, 6384
Double-spurred francolin, bird, 4251
Double sunflower, 6384
Doublts, how to play, 4710
Double tulip, flower, 6378
Double wallflower, 6384
Double zinnia, flower, 6383
Doudney, Sarah: see Poetry Index
Doughty, Charles Montagu, English writer and poet, 3829, 4030
Douglas, Lord Alfred Bruce, British poet, 4081
Douglas, Commander, his heroism, 6566
Douglas, William: see Poetry Index
Douglass, Frederick, American Negro orator and anti-slavery leader, 3246
portrait, 3239
Doukhobors, Russian sect, 2072
Doulton, Sir Henry, pottery industry influenced by his wares, 302
Doulton ware, modern pottery made at Lambeth, 6737
Douro, river of Spain and Portugal, 5270, 5402
at Oporto, 5414
general view, 5413
Dove, bird family, 4119
rock dove, in colour, 3024
stock dove, in colour, 2898
turtle dove, in colour, 2765
various kinds, 4123
Dove and the Ant, fable, 4246
Dover, Kentish port, Caesar's landing seven miles away, 2398
how the cliffs were built, 1636, 2248
Shakespeare's *Cliff*, 345
Dow, Gerard: see Dou
Downing College, Cambridge, arms, in colour, 4988
Downland flowers, 5265, 5265, 5267
in colour, 5393-96
Downy rose, flower, in colour, 4905
Downy woodpecker, bird, in colour, 3261
Dowson, Ernest Christopher, English poet, 4081
Doyle, Sir Arthur Conan, English novelist, 3712; portrait, 3711
See also Poetry Index
Doyle, Sir Francis Hastings: see Poetry Index
Dragonet, eggs of, 5102
Dragon-fly, life story, 5712
number of facets on eyes, 5001
various species, in colour, 5713
Drake, Colonel, American oil prospector, boring for oil in Pennsylvania, 2963
sunk first oil well, 3083
Drake, Sir Francis, English naval hero, 5210
cleared Cape Horn, 1020
dangers faced for England, 3878
exploits on Spanish Main, 7002
hero of England's victory over the Armada, 1084
introduced potato into Europe, 2436
joke in despatch to Elizabeth, 6451
Spanish sea power broken, 3880
voyage round world, 776, 2074, 4598
Pictures of Sir Francis Drake
his ship sailing from Plymouth, 3878
playing bowls on Plymouth Hoe, 4950
portrait, 1077
pursues the Armada, 5211
sees Pacific for first time, 5211
visiting the Spanish ladies of Panama, frontis. Volume 8
Drake, Tyrwhitt, explorer of Holy Land, 6988
Drakensburg, South African mountain range, 3188, 6742
picture, 3185
Drake's Drum, patriotic song by Newbolt, 1269
Drama, English drama begun, just before Shakespeare's birth, 857
Greek pastoral festivals, 672
Draughtboard, from ancient Crete, 794
Draughts, how to play, and pictures, 6542
Drawhook, on railway engine, 3946
Drawing, circle and spiral, 1493
cow simply drawn, with pictures, 2235
drawing a pig, game, 1746
how to draw a cat with the help of two coins, with pictures, 996
how to draw hundreds of faces, with picture, 505
how to play squiggles, and picture, 6302
outline portrait, 1367
rabbits' ears, with picture, 6671
See also Art (School Lessons)
Drawing-frame, for cotton, 175
Drawing-machine, for rope-making, 181
Drawings, by prehistoric man, 191-3, 195, 198
Drayton, Michael, English poet, 4478
See also Poetry Index
Dream, causes of dreams, 1549
sometimes source of inspiration, 3957
do animals dream? 922
how do we know we have dreamed? 2865
why do I dream? 1045
Dream and the Deer, story, 3014
Dreaming John, The Crowning of, pictures to poem, 7037-40
Dream of Eugene Aram, picture and poem, 6401
Dream of Gerontius, The, oratorio by Sir Edward Elgar, 150
Dream of Pygmalion, story, 2890
Dredge, hydraulic dredge for cutting canals, 3032
Dredger, bucket dredger at work, 2916
for gathering oysters, 5731
suction dredger in Suez Canal, 4875
Dresden, town of Saxony, 4428
Zwinger Palace, 6371
Dress: see Clothing
Dreux, France, fine town hall, 6359
Drilling machine, 6352
Drink: see Alcohol
Drink to me only with thine eyes, song by Ben Jonson, 1265
Drinkwater, John: see Poetry Index
Dritzehn, Andrew, Gutenberg's early partner, 1513
Driver ant, winged, 5967
worker, 5961
Driving a blindfold team, game, 3350
Driving axlebox, position on railway engine, 3947
Driving wheel, position on railway engine, 3947
Drogheda, town of Ireland, 3068
capture by Cromwell, 523
Droitwich, Worcestershire. B.B.C. transmitting station, 5107, 2094
Dromios, The Two, in Shakespeare's Comedy of Errors, 6040
Drone-fly, use of larvae, 6089
in colour, 5714
girdled species, 6082
tongue under microscope, 1910
Drongo, bird, habits, 2894
Dropwort, 6492, 5267
Drowning, do people rise to the surface three times before they drown? 6840
Druid, who were the Druids? 4889
Drumhead cabbage, 2437
Drummer Boy, sculpture by Sir W. Goscombe John, 4771
Drummond, William (Scottish poet): see Poetry Index
Drummond, William Henry, Canadian poet, 4205
Drum-stick grass tree: see Grass tree
- Drupe**, in botany, 6495
Drury, Alfred, British sculptor; sculptures, 4650, 4770
Druses, sect in Syria, 6270
Drusilla, wife of Felix, 6540
Drusus, Roman soldier, portrait, 1667
Dryad, nymphs of the trees, 3531
Dryburgh Abbey, ruins in Berwickshire of a 12th-century monastery, view, 1336
Dryden, John, English poet, satirist, and writer of plays, 1609, 1609
literary criticism in form of essays, 2969
See also Poetry Index
Drygalski, Erich von, German Antarctic explorer, discovered Kaiser Wilhelm II Land, 6556
Dry Ice, dropped on clouds to produce rain, 3395
Dry measure, 7069
Dual Alliance, The, France and Russia, 2479
Dubhe, star of the Plough, 3726
Dublin, capital of Eire, 3068
Book of Kells treasured at Trinity College, 450
enamels preserved in museum, 6738
Four Courts and Custom House, designed by James Gandon, 6471
gas-lighting first adopted, 3334
Howth Castle and its architecture, 6235
Pictures of Dublin
arms of city, in colour, 4990
Bank of Ireland, 3073
Dublin Castle, 3073
flag, in colour, 6968
Parliament House, 3072
St. Patrick's cathedral, interior, 3073
University arms, in colour, 4989
Dubois, Dr. Eugene, Java Man skull found by, 2539
Dubois, Paul, French sculptor and painter, bronzes in Nantes cathedral, 4647
Florentine singer, sculpture, 4652
John the Baptist, sculpture, 5253
Dubrovnik, seaport of Yugoslavia, view, 4563
Ducal boat shell, 1179
Duccio, Sienese painter, first great artist of Italy, 565
Du Cerceau, name of family of French architects, one of whom worked on Louvre in 17th century, 6370
Du Chaillu, Paul, French African explorer, 2997
Duck, bird family, 3747
characteristics, 3751
speed of flight, 6852
tree-ducks of the Tropics, 3754
wild species, 3756
how can a duckling swim without being taught? 6234
why does it keep dry in water? 4763
Pictures of Ducks
American wood duck, in colour, 3262
Aylesbury duck, group, 3752
canvas-back, in colour, 3261
golden-eye, 3753
Indian runner, 3752
king eider, in colour, 3262
long-tailed duck, 3752
mandarin, in colour, 3263
Muscovy duck, 3753
parasite's eggs under microscope, 1913
shoveller duck, head, 3752
tufted duck, in colour, 2897
wild duck searching for food, 3752
Duck-bill: see Platypus
Ducking-stool, at Fordwich, Kent, 4864
Duck-mole: see Platypus
Duckweed, of genus Lemna, 6497
shoots float on water, 459
what it is like, 1065
Du Cros, Harvey, a creator of industry, 4112
Duddell, William, Singing Arc invention, 2215
Dufay, French pioneer of electrical research, 5398
Dufferin, Lady: see Poetry Index
Dugald Dalgetty, in Sir Walter Scott's Legend of Montrose, 2722
Dugong, characteristics and food, 2146
originally a land animal, 2145, 2151

Duiker, yellow-backed species, 1403
Duikerbok, habit that suggested its name, 1400
Duisburg, German industrial town, 4426
Duke, coat-of-arms, in colour, 4987
 coronet, 4986
Duke of Burgundy frillulary, butterfly with egg, caterpillar and chrysalis, in colour, 6208
Duke of York's Column, London, 1218
Dulcimer, how it is played, 675
Dulse, seaweed, 3416
Dulwich College, arms in colour, 4989
Dulwich Picture Gallery, Gainsborough's six paintings, 2052
Duma, old Russian parliament, 6856
Dumas, Alexandre, the Elder, French historical novelist and writer of plays, 4457; portrait, 4453
Dumas, Jean Baptiste, French chemist, Pasteur inspired by him, 2623
 carbon compounds knowledge, 6313
Dumas, Reaier, his painting of Napoleon at school, 1446
Du Maurier, George: see Poetry Index
Dumb, what makes some people dumb? 5126
Dumbarton Oaks, conference at, 3800
Du Moncel, his telephone experiments, 1844
Dunbar, Evelyn, British painter, The Fish Queue, painting, 5513
Duncan, Mary Lundie: see Poetry Index
Dunce, how do we get the word? 6848
Dunclad, Pope's satirical poem, 1611
Dundee, Scottish city and port, on the Firth of Tay, in Forfarshire, arms, in colour, 4900
 old steeple and churches, 1338
Dunedin, manufacturing centre of New Zealand, views of town, 2704
Dunkirk, port of France, sold by Charles II to Louis XIV, 1212
 British withdrawal from in Second World War, 1942
Dunlin, bird, in colour, 2766
Dunlop, J. B., his tyre, 4112
Dunluce Castle, Portrush, Antrim, 3070
Dunmow, Little, fitch chair, 4862
Dunsinane Castle, in Macbeth, 6168
Dunstan, St., Anglo-Saxon churchman, statesman, and builder, Benedictine monastery founded on Thorney Island, 5865
 work and teaching, 6920
Dunster, Somerset, old market, 6240
 market house, 1714
Dupleix, Joseph, Marquis, French soldier and administrator, 2946
Dupré, Giovanni, sculpture, Cain, 5010
 La Pietà, sculpture, 5008
Dupré, Jules, French landscape painter, 2790
 Autumn, 3775
 The Great Oak, 2794
 The White Cow, 3776
Dupuy, P. M., Seaside, painting, 3221
Durban, Natal, scenes, 3189, 3194
Düver, Albert, German painter and engraver, 280, 1188
 portrait, 271

Pictures by Albert Diürer

Adoration of the Magi, 1186
 Charlemagne, portrait, 2522
 home in Nuremberg, 4434
 Knight and a Lady, 1194
 portrait of a man, 279
 portrait of a young man, 1187
 portrait of Jerome Holzschuber, 1187
 St. George and the Dragon, 1194
 Stephen Baumgartner as St. George, 1187
Durforth, Captain, Arctic Russia found with Willoughby and Chancellor, 4600
Durham, northern English county, 215
 places in, 7158
 road map, 7146
Durham, capital of Durham, on the Wear, 5865, 5886

Pictures of Durham

arms of the city, in colour, 4990
 cathedral, 1834, 5880
 cathedral, Galilee chapel, 5867
 central tower of cathedral, 5880

north aisle of cathedral, 5867
 university, arms, in colour, 4989
Durham Ox, heaviest bullock, 1154
Durostör, Balkan province, Bulgaria obtains from Rumania, 5774
Durrës, or Durazzo, seaport of Albania, 5775
D'Urville, Dumont, French Antarctic explorer, 6550, 6549
Du Seigneur, Jehan, sculptor, 4647
Dusky cap, edible fungus, 3411
Düsseldorf, German Rhine city, 4426
Dust, fine dust in space, 2866, 3601
 originated from rocks, 518
 where does dust come from? 2666
 where does dust go to? 681
 why does a house become dusty? 6467
 seen through microscope, 1911, 1913
Dutch architecture, cathedrals of Holland, 5992
 buildings in Renaissance style, 6371
Dutch art, account of, 1422
 animal paintings by Cuypp and Paul Potter, 1426
 Haarlem school that produced Hals and the Ruysdaels, 1424
 painters of the 19th century, 3399
 the great Rembrandt, 1557
Dutch clover: see White clover
Dutch East Indies, 5531
 Indonesia claims independence, 6480
 Japanese invasion during Second World War, 1944
 District Governor's flag, in colour, 6974
 map, in colour, 7097
 scenes, 5542
 See also Netherlands East Indies
Dutch tail-less dog, 668
Dutch West India Company, flag, in colour, 6971
Duval, Jean, famous weaver of tapestries, 6738
Duvaucel's trogon, bird, in colour, 3261
Duyster, W. C., his painting, Players at Tric-Trac, 3774
Dvorak, Antonin, Czechoslovakian composer, 150
 portrait, 145
Dwale: see Deadly nightshade
Dwarf, growth arrested through failure of thyroid gland, 3174
Dwarf cherry, what it is like, 4039
Dwarf mallow, of genus Malva, 6492
 what it is like, 5268
 flower, in colour, 5396
Dwarf orchis, or dark winged orchis, description, 5268
 flower, 5265
Dwarf plum-thistle, in colour, 5395
Dwarf silene: see Moss campion
Dwarf tufted centaur, in colour, 5644
Dwight, John, English sculptor, 4767
Dyaks, head-hunting cannibals of Borneo, 2940
 dancing women, 3434
Dyck, Van: see Van Dyck
Dye, its story, 4471
 British creators of, 4105
 plants that yield dyes, 2938
 See also Aniline dye
Dyer, Sir Edward: see Poetry Index
Dyer, John, Welsh poet, 2102
Dyer's greenweed, flower, 5021
Dyer's rocket, flower, in colour, 5144
Dying Gaul, The famous statue by Epigonos, 4396, 4403, 1784
Dyke, Henry Van: see Van Dyke
Dyke, Holland's defences against the sea, 5524
Dymont, Clifford, British poet, 4084
Dynamics, Newton's laws the foundation of a science, 6309
Dynamo, its story, 609, 1348
 Faraday invents, 5332
 under a railway carriage, 3944
 complete modern example, 1352
 diagram of action, 1351
 dynamos at London Telephone Exchange, 4384
 example of an early form, 609
 later form of, 609
 position in motor-car engine, 4320
 position of wind-driven dynamo on aeroplane, 4692
 position on motor-cycle, 4326
 steam-engine which drives, 611
 Westinghouse, 609

Dynasts, The, Thomas Hardy's great drama, 5584, 4080
Dyne, definition of: see Units of measurement, 7071
Dzierzoniow, town of Upper Silesia, Poland, view, 5036

E

Eacles cacicus moth, caterpillar, in colour, 6209
Eacles imperialis moth, caterpillar, in colour, 6209
Eagle, age and characteristics, 3629
 action of alighting, 4753
 various species, 2765, 2897, 3627, 3633-36
Eagle owl, characteristics, 3504
Eagle-ray, fish, characteristics, 5096
Eakins, Thomas, American painter, 3287
 his painting, Chess Players, 3296
Eaking, Nottingham, oil production, 2968
Ear, its marvellous machinery, 3297
 cause of sea-sickness connected with semi-circular canals, 5002
 connection of bone of inner ear with sense of balance, 3405
 drum described, 1550, 3298
 evolved from gill-slit and arch, 3407
 its power to distinguish sounds, 6180
 where are a frog's ears? 4994
 why do our ears seem to sing at times? 1920
 diagrams of inner parts, 3299
 gland beneath it, 3173
 how it collects sound-waves, 3297
 sound-wave striking drum, 3299
 spiral coil, 3299
 See also Hearing and Sound
Eared grebe, bird, in colour, 3021
Eared hopper, insect, in colour, 5714
Eared seal, 906
Earl, coat-of-arms, in colour, 4987
 coronet, 4986
Earl, Maud, her painting, The End of the Trail, 663
Earls Barton, Saxon tower, 5865, 725
Early Briton: see Britain, Ancient
Early purple orchis, or cuckoo orchis, fertilised by bees, 4415
 member of genus Orchis, 6496
 what it is like, 4415, 4781
Ear-rings, are ear-rings good for the eyes? 929
Ear-shell, 1180

EARTH AND ITS NEIGHBOURS

The following are actual headings of the chapters in this group; the subjects dealt with will be found in their proper place in the index
The Big Ball We Live On, 9
How the Earth was Made, 137
Three Ways the Earth Moves, 265
Inside the Wonderful Ball, 393
How Fire and Water Made the World, 517
How Sun and Wind Made the Hills, 641
The Foundation Stones of Britain, 765
The World of the Cambrian Age, 885
The World in the Silurian Age, 1009
The World in the Devonian Age, 1133
The Carboniferous Age, 1257
The World in the Triassic Age, 1381
The World in the Jurassic Age, 1505
The World in the Cretaceous Age, 1633
The World in the Eocene Age, 1753
The Pliocene and Pleistocene, 1877
The Stony Book of Nature, 2001
The Face of the Earth, 2125
Mountains and Glaciers, 2245
Forests, Woods, and Deserts, 2369
The Rivers and the Seas, 2493
What Climate Means to Us, 2617
Why the Seasons Come and Go, 2741
The Rain that Raineth Every Day, 2865
The Immensity of the Universe, 2989
The Sun and His Power, 3109
The Inner Planets, 3233
The Outer Planets, 3353
Earth's Only Child, 3477
Fragments of the Solar System, 3601
The Stars in their Brightness, 3725
What We Know About the Stars, 3849
What is Happening in the Skv, 3973

The Wonder of Matter, 4097
 How the Elements are Built Up, 4221
 Transformations of Matter, 4345
 Chemistry in the World's Life, 4469
 The Movement of Things, 4593
 What Gravitation Means, 4713
 How Things are Measured, 4833
 The Size and Weight of Things, 4953
 The Centre of Gravity, 5073
 The Pressure of the Air, 5197
 Hot Things and Cold Things, 5317
 How Heat Works for Us, 5441
 Heat and Temperature, 5565
 The Wonder of Light, 5689
 What Is It that Makes Light? 5815
 Where Colour Comes From, 5935
 The Waves of Sound, 6059
 Music and Noise, 6179
 Wonderful, Wonderful Music, 6303
 The Behaviour of a Sound, 6425
 The World Throughout the Ages, 6545
Earth. The references that follow apply only to the earth's structure and its astronomical and geological story. For facts about its population, and so on, see **World**
 age measured by salt, 1540
 air-covering's depth, 139, 397
 amount of material in it, 5243
 area of sea and land, 560, 2125, 7059
 average height of land surface, 7059
 axis, effects of tilt on seasons, temperature, and so on, 2127, 2741, 2742
 beginnings, 9
 Bible story of its origin, 247
 changes taking place in, 520, 6545
 circumference, 393
 climatic change possible, 6547
 constructive purpose at work throughout the ages, 6545
 cooling process described, 140
 course in the heavens, 18
 crust, 12, 395, 517, 1381, 2125
 density, 393, 5243
 distance from Sun, 2618, 3110, 3118
 electricity in, 105, 238
 first living creatures, 81, 646
 forests once covered it, 2369
 geological periods or ages, 10, 646, 765
 See also chapter headings to **Earth**
 heat, its gains and losses, 395, 2618
 hills and their making, 641
 ice or Glacial Age, 168
 illustration of its insignificance, 2990
 magnetic theory of Gilbert, 6309
 magnetic properties, 359
 making of the Earth, 137, 517
 man appears, 1
 microbes contained in a grain of soil, 577
 Moon formed from it, 140
 motion, 18, 265, 613, 6233
 only planet with one moon, 3477
 path round the Sun, 268
 peoples and population; see **World**
 radium as source of heat, 395
 rare constituents of soil, 4345
 rate at which falling objects travel toward it, 4835
 rivers and seas formed, 12
 rocks and their history, 643
 rotation round Sun, 16, 268
 seasons, and their cause, 268
 shape of the Earth, 14, 139, 517, 2127
 silence of the earliest days, 2369
 size, 393, 3109, 3118, 5243
 smoothness in proportion to size, 4883
 spinning compared with Sun, 3112
 spinning explained, 16, 268
 spinning becoming slower, 4833, 6547
 statistics: see **Astronomy** tables, 7061
 strength required for rod connecting Earth with Sun, 4594
 Sun's energy and how it is used up, 2618
 Sun's light and heat on the Earth, 3109
 sunspots affect it, 8114
 Sun's pull across space, 3601, 4593
 surface changing, 16, 518, 1880
 surface's peculiarities, 2125, 2126
 tilt explains Glacial Age, 269
 vegetation belts, 2621
 water's origin on Earth, 518
 weight of a cubic foot, 7074
 year's length, 3118

Wonder Questions

could the Earth support all the things that are born? 3890

does all rain reach the Earth? 6599
 does everything in the air move with the Earth? 4268
 does the Earth ever bump into anything? 4386
 does the Earth make the air we breathe? 4518
 does the Earth try to pull a tree down? 1920
 has the Earth a light of its own like the Sun? 922
 has the Earth ever been weighed? 5243
 how did all the metals get into the Earth? 4893
 how did men find out the Earth's circumference? 4390
 how does the Earth turn without shaking? 6101
 how do we know it is in motion? 6233
 how far does rain sink into the Earth? 6599
 how old is the Earth? 4017
 if the Earth is a ball, why does an earthquake shake only part of it? 1049
 if the Earth is shrinking shall we be toppled off? 5128
 is the Earth getting smaller? 2664
 is the Earth hollow inside? 4890
 is the Earth quite round? 4883
 is the stuff in earth and air and sea always changing places? 6725
 what is the deepest hole in the Earth? 6353
 what is the world like at the Poles? 6846
 what makes the Earth quake? 442
 why did not the Earth burn up when it was a ball of fire? 1801
 why do not we feel the Earth going round? 4514
 will the Earth become like the Moon? 2043
 will the Earth ever be cooled right through? 5373
 will the Earth ever stop spinning? 5245
 would the Earth seem to be up in the sky if we were on the Moon? 4760

Pictures of the Earth

as ball of fire, in colour, facing 137
 by day and night, 5121
 cooling down, 9
 crust and raging furnace beneath, 397
 crust crumbling and wearing, in colour, facing 765
 crust folded over, 5732
 distance from stars, 3726
 distance from Sun, 17
 facing Sun in summer and winter, 265
 fires bursting out, in colour, facing 393
 flattened at poles, diagram, 4883
 how we know it is round, 14
 journey round Sun, 15
 land and water map, 92, 93
 mountain ranges formation, 520
 orbit of Earth, 3234
 origin of the Earth, 6545
 path round Sun, 3477, 3601
 photographed from height of 100 miles, 4755
 position every six hours, 137
 raging furnace beneath crust, 397
 seen from Moon, 3479
 size compared with other planets, 3117
 size compared with Sun, 3849
 soil changes through the ages, 644, 645
 speck in the universe, map, 2995
 spinning round, 269
 strata formation, 644, 645
 supported by elephants, ancient Hindu belief, 915
 surrounded by water, old idea, 915
 tilt affects length of days, 2741
 tilt now and after 12,000 years, 268
 weighed by Cavendish, 5242
 See also **Astronomy** tables; **Eclipse**; **Geology**; **Planet**; **World**; and names of physical features, continents, and so on.

Earthware: see **Pottery**

Earth-nut or monkey-nut; see **Pea-nut**

Earth-pillar, what is it? 5859

how it is formed, 5856

Earthquakes, in Japan, 6622

how does an earthquake register itself on a machine? 5125

why does an earthquake shake only part of the Earth? 1049

seismometer at work, 5125

Earth-wave, earthquakes help us to find how quickly they travel, 442

Earthworm: see **Worm**

Earwig, garden pest, 5720

varieties, in colour, 5713

Easby Moor, Yorkshire, monument to Captain Cook, 343

East, Sir Alfred, English landscape painter and etcher, 2546

East, Ancient, map, in colour, 7093

East, Near, map, in colour, 7093

East Africa, Portuguese, description, 6753

map, 6755; in colour, 7099

East Anglia, history and description, 212

East Cape, Captain Cook names easternmost point of Asia, 4604

Easter, how is Easter fixed? 6975

humpty dumpty eggs for, 999

Easter lichen, plant, 3408

Easter crown, in heraldry, 4986

Eastern literature, most influential in history of world, 5673

Eastern Region, British Railways section, 3950

pre-fabricated track being laid, 3951

East, Far, maps, in colour, 7036-97

Eastham Lock, on the Manchester Ship Canal, 4882

East India Company, 4125, 5528, 6514

East Indies, archipelago between Asia and Australia, map, in colour, 7097

See also names of specific countries

Eastman, George, invented cinema film, 6704

Eating, what did the first living things eat? 5006

why have we different tastes in eating? 6226

See also **Food**

Ebal, Mount, view, 3464

Ebbo, Archbishop of Rheims, missionary to Danes, 5163

Ebe, Burkhard, his sculpture, Nymph at Well, 5260

Ebert, Herr, German socialist, 4300

Ebonite: see **Vulcanite**

Ecbatana, ancient Median capital, 6272, 6388

Ecce homo, Latin for Behold the man! 936, 5558

painting, by Anton'o Ciseri, 4705

Eccentric crank, 6349

Eccentric rod, in railway engine, 3946

Echegaray, José, Spanish dramatist, 5059

Echidna, animal, 2516, 2519, 2515

Echidnus, term in architecture, 5497

Echo, myth, 6823, 3580, 3522

sculpture by Julius Frick, 5260

Echo, radar echo reflected from Moon, 2444

whispering gallery of St. Paul's Cathedral, 6062

Echo and Narcissus, story, 6823

painting by J. W. Waterhouse, 3522

Echometer, used on ships for depth sounding, 3576, 2414

Eclit ant, its ferocity, 5966

Eclipse, intervals between eclipses of Sun, 817

Thales predicts eclipse of Sun, 672

Sun in eclipse, 3110

world map of the Sun's eclipses, 816

Encomus, battle of, naval battle between Rome and Carthage, 4795

Economic and Social Council, United Nations, 6488

Economic Commission for Europe, Uno, 6483

Economics, Adam Smith's book, 5015

value, its meaning, 5513

Ector, Sir, at Lancelot's funeral, 6944

King Arthur brought up by, 6941

Ecuador, Republic of South America, 7021

flag, in colour, 6972

gathering cocoa pods, 2315

views of the country, 7011

Maps of Ecuador

animal life of the country, 7028

general and political, 7023

map, in colour, 7104

physical features, 7024

plant life, 7026

Eddas, collections of sagas, **4937**
Eddington, Sir Arthur, modern theory about light, **5690**
Eddystone lighthouse, description, **338**
 view, **350**
Edelfeldt, Albert Gustaf, Finnish painter, paintings, Adoration of Wise Men, **3588**
 Pasteur in Laboratory, **3404**
Edelweiss, plant, evaporation prevented by woolly surface of leaves, **1071**
 its protection against cold, **203**
Eden, Garden of, how Adam and Eve were banished, **248**
 Expulsion from Eden, painting by A. Nowell, **246**
Edentates, characteristics, **2269, 2276**
Edfu, temple on banks of Nile, **5380, 6860, 6877**
 great pylon, **5386**
Edgar, King, his peaceful reign, **596**
Edgar, in Shakespeare's King Lear, **6170**
Edgehill, battle of, **5569**
 Harvey with children of Charles I, **2505**
Edgeworth, Maria, English novelist and essayist, **2348**
 studies of Irish country life, **3582**
 portrait, **2349**
Edict of Nantes, (1598), religious freedom in France established, **3922**
Edinburgh, capital of Scotland, Arthur's Seat, **2245**
 foundation in 7th century, **594, 2777**
 Heriot's Hospital attributed to Inigo Jones, **6241**
 Raeburn House, **5696**
 Scottish National Gallery, **6472**

Pictures of Edinburgh
 arms of city, in colour, **4990**
 castle seen from Grassmarket, **1336**
 flag, in colour, **6968**
 general view, **2775**
 National War Memorial, **1337**
 Princes street, **842**
 St. Mary's Cathedral, **6476**
 Scottish National Portrait Gallery, **6476**
 university arms, in colour, **4989**
Edinburgh Castle, Union-Castle liner, launching, **2658**
Edison, Thomas Alva, American inventor, **5943**
 accumulator of nickel invented, **737**
 carbon filament lamp, **1098**
 improvement in telephone, **1844, 1846**
 incandescent lamp invention, **5332**
 inventive type of mind, **4149**
 kinetoscope invented, **6704**
 multiple-sending developments in telegraphy, **1602**
 Edison in his laboratory, **5331**
 thrown from train, **5947**
 portraits, **1843, 4131**
Edmonton, capital of Alberta, Canada, Parliament Buildings, **2330**
Edmund, in Shakespeare's King Lear, **6169**
Education, its founders, **4955**
 alcohol's effect, findings by Ministry, **2680**
 ancient Babylonian, **428**
 growth in Great Britain, **1584**
 increase in Ireland, **3067**
 in United States, **3684**
 its importance for a nation, **2976, 6376**
 penny post a spur to reading and writing, **1555**
 Poland's committee in 1773, **5027**
 Russia's progress, **6021**
 State compulsory education, **6254**
 suppression in Italy, **896**
 scholarships and grants, **6255**
 schools as they used to be, **4959**
 sculpture by Albert Toft, **4770**
Education Act (1870), **1588**
 provisions of the Act passed in 1944, **1948**
Educational ladder, what it means, **6255**
Edward I, king of England, crosses erected to Queen Eleanor, **952, 5873**
 ordinance on dishonest trading, **3382**
 Wales united to England, **951**
 wars with Scotland, **894, 952**
 dies within sight of Scotland, **953**
Edward II, king of England, defeated at Bannockburn, **952**
Edward III, king of England, battles of Crecy and Poitiers, **952, 954**

fleur-de-lys added to arms, **4984**
 St. George's Cross on white flag adopted, **6961**
 tomb in Westminster Abbey, **958, 5874**
 woollen industries protected, **800**
 Chaucer reading poems to the King, **367**
Edward IV, king of England, **960**
 his sons imprisoned in the Tower, **1807**
 visit to William Caxton, **1513**
Edward V, king of England, imprisoned in Tower of London, **1807**
Edward VI, king of England, Bluecoat school founded, **1081, 6844**
 diary kept by, **1852**
 portrait by Holbein, **1079**
Edward VII, king of England, **1705**
 portrait, **1705**
Edward VIII, king of England, **1830**
Edward, the Black Prince, invested with Order of Garter, **3507**
Edward the Confessor, St., buried in church he rebuilt, **5865**
 tomb in Westminster Abbey, **5874**
 Westminster Abbey begun, **707, 4225**
 flag, in colour, **6968**
 picture of Edward in the Bayeux Tapestry, **712**
Edwards, William, single-arch bridge, built by at Pontypridd, **547**
Edwin, St., king of Northumbria, exile who became a Christian king, **2775**
 Edinburgh's founder, **594, 596**
 baptism at York, **2277**
 watching flight of sparrow, **2777**
Edwin's Burgh, called Edinburgh, view, **2775**
Eel, description, **4982**
 journey from rivers to breeding ground in Atlantic, **37, 4981**
 ten million eggs laid, **4858**
 in colour, facing **5197**
Egbert, first king of England, **592**
Egede, Hans, Norwegian missionary, **1137**; portrait, **1137**
 watching departing ship, **1141**
Egg, animals that lay eggs, **2515**
 chicken feeds on the white, **2786**
 China's export, **6502**
 eel's voyage to lay its eggs, **37, 4981**
 humpty dumpty, for Easter, with pictures, **999**
 number laid by eel, **4858**
 scrambled eggs, how to make, with picture, **1864**
 sulphur and hydrogen in, **5615**
 test to show freshness, with picture, **1493**
 yolk contains more lime than any other food, **2308, 2559**

Wonder Questions

why cannot we break an egg if we hold it lengthways? **1306**
 why does a bad egg float? **5619**
 why does an egg blacken silver spoons? **5615**
 why have the eggs of birds so many colours? **4268**
 British butterflies' eggs, in colour, **6203-08**
 hard-boiled egg in liquid air, **5317**
Egg cap, game, **3596**
Egg Cosy, how to make a money-bag egg cosy, with picture, **6175**
Egg plant, member of same family as tobacco plant, **2942**
Egg-sacs, of cyclops, under microscope, **1914**
Egg-wash, how it gets its name, **5842**
Eglantine: see Sweet briar
Eglantine and the Myosote, **1028**
Egret, bird, protects Egyptian cotton from boll-weevil, **3871**
 two varieties, **3868**
Egypt, kingdom of north-east Africa, history and description, **6873**
 agricultural products, **6873**
 archaeological discoveries, **6859 63, 6874**
 architectural wonders, **5378**
 attains fuller independence, **1826**
 British influence, **1588, 6873**
 date palm used in decoration, **1935**
 excavations that have revealed early history, **6860**
 Napoleonic wars, **1453, 1454, 4046**
 Nile floods give harvest, **425**
 Persian conquests, **6387, 6389**

religion and customs of ancient Egypt, **6871**
 Saracen influence on architecture, **5024**
 Stone Age in Egypt, **198**
 Sudan ruled by Britain and Egypt, **3310**
 Tombs of the Kings, **5379, 6874**

Pictures of Egypt

Aswan Dam on the Nile, **5976**
 date palm in Egypt, **1939**
 flag, in colour, **6973**
 food-carriers of ancient Egypt, **74**
 funeral procession at a feast, **425, 6863**
 how the Pyramids were built, **308**
 irrigation works, **5976**
 packing wool on banks of Nile, **798**
 people of Egypt, **6875, 6879**
 postman, **4636**
 preparing ground for cotton, **171**
 Pyramids, **4085, 4886**
 Ripon Falls on the Nile, **2500**
 scenes, **6880, 6881**
 temples, **5374, 5381-88**
 trading boats on Nile, **2499**
 map, in colour, **7098**
 map of Ancient Egypt, in colour, **7093**
 map, showing historical events, **6882**
Egypt Exploration Fund, English society formed, **6867**
Egyptian art, absence of nude figures explained, **4024**
 architectural wonders described, **5378**
 beast and bird forms, **3901**
 enamelwork and embroidery, **6738**
 in the tombs, **316, 321, 5379**
 statuary, grand and symbolic, **3892**

Pictures of Egyptian Art

Book of the Dead, **318, 5673**
 buildings, **5374, 5381**
 ceremony of wrapping mummy, **6862**
 coffin, **70**
 mummy picture, **323**
 picture-writing on wall, **317, 319, 685**
 portrait of king, in colour, **317**
 potter at work, **301**
 relics, **6861-65**
 sculpture, **3893**
 statue of Rameses II, **6861**
 temple of Isis, **6861**
 writing on papyrus, **685**
Egyptian cobra, snake, **4615**
Egyptian coucal, bird, **3377**
Egyptian jerboa, animal, **1031**
Egyptians, the inhabitants of Egypt, **425**
 Gipsies believed to be wandering Egyptians, **6102**
 preservation of dead, **316**
 trade carried on by caravans and ships, **427**
 writing tools, **2034**
 why did the Egyptians use straw for their bricks? **3649**
 why did they worship crocodiles? **6728**
Egyptian Singer, sculpture by Onslow Ford, **4653**
Egyptian thorn: see Gum arabic
Egyptian culture, bird, **3634**
Ehrenbreitstein, fortress in Germany, **4430**
Ehrenburg, Ilya, Russian writer, **4820**
Ehrlich, Paul, German physiologist, **2623**
 researches in fighting disease, **4471**
 portrait, **2623**
Eider-duck, description, **3756**
 in colour, **2765**
Eiffel Tower, America speaks to Paris by wireless telepho, **2215**
 centre of world wireless, **2099**
Eindhoven, Holland, **5536**
Einkorn wheat, class by itself, **1325**
Einstein, Albert, Newton's law of gravitation opposed, **494**
 exiled from Germany, **4303**
 retracts theory of a finite universe, **6724**
 space curved like sphere theory, **2414**
 Theory of Relativity proved true, **6317**
Eira (ship), Leigh Smith's Arctic ship, **6435**
Eire, former name of Ireland, **1825**
 See under Ireland
Eisenhower, General Dwight, Allied Commander-in-Chief in Second World War, **1945**

- Ekelund, Vilhelm**, Swedish poet, 4942
- Ekelund, Vilhelm**, Swedish balloonist, 6439
- Elagabalus**, Roman Emperor, 2879
- El Alamein**, battle during Second World War, 1944
- Elam and the Elamites**, cuneiform writings of ancient people, 6869
- believed to be first civilised race, 6859
- mentioned in the Bible, 6798
- map of Elam, in colour, 7093
- El Amarna**: see Tel-el-Amarna
- Eland**, animal, 1399, 1398
- Elasmosaurus**, prehistoric reptile, 1636
- Elastic Band**, how to make a bow from an elastic band, and picture, 4096
- Elasticity**, its meaning, 395
- causes a ball to bounce, 307
- of steam, 3205
- Elate hornbill**, bird, 3254
- Elba**, island off the coast of Tuscany, 1458, 4046
- Elberfeld-Barmen**, German industrial centre in Rhenish Prussia, 4426
- Elbow-joint**, 1694
- diagram, 1693
- Elbruz**, mountain in the Caucasus Range, 6014
- Elche**, Spain, road leading to oasis, 5283
- Elder tree**, description and uses, 4040
- what to make from an elder branch. with pictures, 3348
- blossom, 4041
- fruit, in colour, 3669
- El Djem**, Tunis, Roman Colosseum at, 5509
- Eleanor, Queen** (Aquitaine), wife of Henry II, 718
- lion substituted for leopard in national arms, 4984
- Eleanor, Queen** (Castille), crosses erected in her memory by Edward I, 952, 4766, 5873
- saved Edward I's life during the Crusades, 951
- Eleanor**, grand duchess, portrait by Bronzino, 824
- Election**, political, voting in, 4408
- Electric battery**, cell's action, 736, 1350
- its inventors, 482, 1348
- Plauté's device, 735
- Volta's pile, 481
- different forms of cells, 480
- six Leclanché cells, 1350
- structure of voltaic cells, 1350
- Electric bell**, how it works, 855, 974, 977
- Electric bulb**, what it is, 354, 1100
- Electric cable**: see Telegraphic cable
- Electric cell**: see under Electric battery
- Electric clock**, how it works, 974
- in our homes, 6831
- synchronome system, 975
- Electric coil**, in dynamo, 609
- experiments, 978
- Electric dynamo**: see Dynamo
- Electric Eye**, or photo-electric cell, what it is and does, 2339
- Electric furnace**, its work, 1227
- heat of gas and Sun compared, 1227
- Héroult and Moissan types, 1229
- Electricity**, the heart of matter, 105, 233, 480
- replacing steam, 3952
- applications in the home, 1354
- attraction and repulsion discovered by Dufay, 5326
- benefits of national use, 5886
- circuit, open and closed, 855
- currents measured by electronic beam, 2714
- currents measured by the galvanometer, 2714
- electronic heat in welding, 2718
- electrons in, 2714
- extensive use in Italy, 4914
- grid system, 108
- heating power, 484, 1227
- horse-power, what it means, 1922
- how used in motor-car, 4330
- in industry, 106, 856, 2913
- lighting: see Electric light
- made at home, 503
- magnet: see Magnet
- magnetism and electricity, 482
- marvellous work it does, 853, 1347
- measures, 612, 2714
- mercury arc rectifier, 2715
- new words added to language, 5251
- Niagara Falls power station, 1348
- Ohm's law, 610
- origins of its name, 233, 5618
- pioneers of its study, 1347, 5323
- pylons and overhead cables, 107
- railways: see Electric railway
- rectifying, use of electrons, 2714
- Shannon power scheme, 3067
- storage of power, 234, 735, 1348
- table of measures, 7071
- thunder due to electricity, 310
- traffic signals worked by, with pictures, 6850
- United States' production, 3681
- United States' water power sources, 3675
- uses, 106, 854, 1347, 3574, 3952
- Wimshurst machine described, 238
- Pictures of Electricity**
- accumulator diagrams, 1352
- controls of all-electric ship, Strathnaver, 3706
- discharge at wireless station, 481
- experiments at home, 503
- Franklin experimenting with pane of glass, 735
- how produced from atomic pile, sectional drawing, 4812
- iron bar magnetised by wire coil, 1347
- Morrison experimenting with pith balls, 1601
- Newton experiments with electrified stick, 237
- Oersted experimenting, 483
- power-house in the Grampians, 5609
- switchboard, 1352
- uses in house, 1354
- vulcanite electrified by friction, 1349
- works at Ankara, Turkey, 6144
- See also Electron; Telegraph; and Wireless
- Electric Lamp**: see under Electric light
- Electric light**, its story, 1097
- advertising signs, 1100
- arc lamp, its invention and development, 1097, 5330
- carbon filament lamps, 1098
- first lamp invented, 234
- gases used in lamps, 856, 1100
- how to fix it, and picture, 6057
- incandescent lamp, 854
- measure of consumption, 612
- pocket lamps, why they run down, 483
- short-circuiting prevented by fuse boxes, 612
- use by divers, 6589
- what makes it glow? 4759
- Pictures of Electric Lighting**
- discovery of the lamp, 235
- how railway carriages are illuminated, 4073
- how the filament is made to glow, 1099
- how the torch works, 480
- in cinema industry, 6705-07, 6709, 6711
- Electric magnet**: see Magnet
- Electric oven**, 2429
- Electric railways**, progress of, 3952
- dead man's handle, 2665
- locomotives, 4075
- Southern Region signal box, 4192
- Electric ray**, fish, 5105
- Electric telegraph**: see Telegraph
- Electric torch**, why it runs down, 483
- how it works, 480
- Electron**, story of the tiniest known thing, 2713
- dead aided by, 2715
- light produced by movement of electrons, 5690, 5815
- nature and behaviour, 4101
- smallest thing that is known, 1308
- source of matter, 4222
- use in microscope, 4099
- ceilometer, height-recording machine, 2717
- computing machine, 2717
- metal-detecting machine, 2717
- microscope, 2715
- moving in stick of vulcanite, 1349
- oven in the home, 2715
- tube used by Sir J. J. Thomson, 2713
- Electron Microscope**, its powers of magnification, 1885, 2715
- Electro-plating**, its value in preserving metals, 856
- how forks are electro-plated, 2913
- Electroscope**, 238
- Elegant tortoise**, reptile, 4497
- Element**, formation of Universe, 4221
- chief elements, 4345
- man-made elements, 4221
- progress of discovery, 6312
- the Sun's elements, 3116
- For Atomic Weights and Symbols: see 7073
- Elephant**, story of family, 2021
- fight with rhinoceros, 1778
- Hannibal's elephants, 2923
- Jingo of Zoo who died at sea, 2027
- Jumbo who was killed, 2022
- rogue elephants and their habits, 2024
- skull of elephant, 3163
- speed of charge, 6852
- straight-tusked species, 1879
- has an elephant a bone in its trunk? 3163
- Pictures of Elephants**
- baby, 2023, 2027
- cave man's drawing, 192
- different types, 41, 2025
- holding each other's tails, 2021
- Indian state elephants in river, 2956
- migration on Mount Kenya, 223
- ploughing rice field in Ceylon, 1703
- skeleton compared with man's, 3613
- straight-tusked, of Pliocene Age, 1879
- wounded elephant chasing man, 3003
- wrestling in India, 2023
- Elephanta**, rock temple at, 5626
- Elephant hawk moth**, and caterpillar, in colour, facing 5935
- Elephant Island**, seals that saved Shackleton's men, 911
- Shackleton's great voyage from, 6561
- Elephants and the Moon**, story, 4240
- Elephant-seal**, characteristics, 912
- Elephant-shrew**, characteristics, 298
- Eleusis**, mysteries, 3516
- Elew brothers**, discover a glaze for pottery, 302
- Elfin shark**, fish, 5233
- Elgar**, Sir Edward, English composer, 150
- portrait, 145
- Elgin**, Thomas Bruce, Lord, Scottish statesman, brought the Elgin Marbles from Athens to London, 4144, 6466
- Elgin**, capital of Elginshire, Gothic work in cathedral, 5871
- Elgin Marbles**, taken from the Parthenon, 3769
- what are they? 6466
- El Greco**, Dominico Theotocopuli, first great Spanish painter, 1307
- portrait of unknown man, 3773
- Saint Basil, 1311
- Eli**, his story, 1787
- pictures, 1739, 1740
- Elihu**, picture to poem, 1089
- Elijah**, his story, 2481, 2605
- fleeing before Ahab, 2481
- meets Ahab in vineyard, 2605
- returning widow's son alive, 2480
- Eliot**, George, pen-name of Marian Evans, or M. A. Cross, English novelist, 3584; portrait, with father, 4135
- See also Poetry Index
- Eliot**, Sir John, English patriot, Parliamentary leader against Charles Stuart, 525, 4008
- defended free speech in House of Commons, 1208; portrait, 521
- Eliot**, Thomas Spearns, British writer and poet, 4083
- Elisha**, Naaman and Elisha, 2727
- parting from Elijah, 2606
- Elizabeth**, queen of England, the reign that saw stirring times, 1082
- born at old Greenwich Palace, 6241
- defeat of the Spanish Armada, 1084
- great writers of her time, 857
- Zurich has letters from her, 4672
- Pictures of Queen Elizabeth**
- going aboard the Golden Hind, 2674
- last hours, 1080
- portraits, 1077, 1944, 4133
- receives French Ambassador, 1073
- Shakespeare reading play, 979
- signs death warrant of Mary, 1080
- walking on Raleigh's cloak, 5202
- watches experiment in electricity, 5331
- wax effigy, 4860
- with boy, Francis Bacon, 4836
- witnessing a pageant, 1080

Elizabeth, queen of England, consort of George VI, her standard, in colour, 6965
Elizabeth, princess and heir to British throne, 1830
 her standard, in colour, 6965
Elizabeth, princess of Austria, portrait by François Clouet, 1054
Elizabethville, Belgian Congo, 6752
Elk, or moose, characteristics, 1404
 pictures, 198, 1397, 2201
Elleck, fish, in colour, 5097
Ellen's Isle, Loch Katrine, 1337
Ellerton, John, English clergyman and writer of hymns, 1758
 See also Poetry Index
Ellesmere Canal, construction, 2158
Ellesmere Island, discovery, 6432
Elmere Manuscript, picture of Chaucer in it, 366
Ellice Islands, British colony in the Pacific, 3428
 resident's flag, in colour, 6967
Elliot, Charlotte, English writer of hymns, 1758
Elliot's pheasant, bird, 4249
Elliot, Ebenezer, English poet, 3956, 3953
 See also Poetry Index
Elliott dolphin, sea animal, 2147
Ellipse, how to find area and circumference, 7075
Ellora, rock temple at, 5626, 5634
Ellsworth, Lincoln, American explorer, attempts to fly over North Pole, 6442
 Antarctic flight, 6562
Elm, fruit has parachute, 948
 relation of stinging nettle, 4283
 uses of timber, 3788
 fruit, in colour, 3671
 tree, leaves, and flowers, 3908
Elsinore, Denmark: see Helsingør
Eltham Palace, Kent, 6237
Ely, city of Cambridgeshire, on the Great Ouse, 5866, 5871
Pictures of Ely Cathedral
 choir, and window, 5876
 north transept with Norman arch, 719
 Prior's doorway and columns, 719
 St. Etheldreda's shrine, 5876
 view of exterior, 1834
Elysée, what is the Elysée in Paris? 6596
Elysium, mythological heaven of Greeks, 3531
Embroidery, lovely embroideries that have been made through the ages, 6738
Bayeux Tapestry, 6739
 darning on net, with pictures, 4711
 learn to do smocking, with pictures, 5067
 on a needlecase, with pictures, 2487
 pretty borders, with pictures, 2610
Embryo, what it is, 945
Embryo-sac, what it is, 704
Emerald, precious stone, 1301
Emerson, Ralph Waldo, American essayist and poet, 4202, 4332
 portrait, 4132
 See also Poetry Index
Emin Pasha, German explorer, 3004, 2997
Emma, novel by Jane Austen, 2350
Emmanuel College, Cambridge, arms, in colour, 4988
 chapel and cloister, 6248
Emmaus, Jesus walks to, 4826
 road to, 3470
Emmer wheat, all wheat derived from, 1325
Emotion, character made by control of our emotions, 4279
Empedocles, who was he? 6720
Emperor and the Figs, story, 2634
Emperor daffodil, flower, 6383
Emperor moth, and caterpillar, in colour, facing 5935
Emperor penguin, bird, 4003, 4001
Emperor phanocus, beetle, in colour, 6336
Emperor's Dinner, The, story, 6817
Emperor's New Clothes, story, 3987
Emperor's Nightingale, story, 6073
Emperor's Taxes, story, 3014
Empire Day, how did it begin? 4017
Empire State Building, world's highest building, 4995

Empire Swimming Pool, Wembley, 6613
Empson, William, British poet and writer, 4084
Emsworth, Hampshire, view, 1593
Emu, characteristics, 4370
 pictures, 2456, 4360
Enamel, the art of enamelling, 6738
 13th-century panel of St. John, 6734
Enchanted Fawn, The, story with picture, 2383
Enchanted Horse, The, story, 1271
Enchanted Kettle, The, story, 6681
Enchanted Mountain, The, story, 1147
Enchanted Thorn, The, story, 4487
Enchanter's nightshade, plant, classification, 4782, 6012, 6492
 flower, in colour, 4907
Encke's comet, career of, 3607
Enclosure Acts, agricultural workers turned adrift in 19th century, 1581
Encyclopaedia, China produced one, 1000 years ago, 6503
 what does encyclopaedia mean? 60
End, must all things end? 6969
Ender, Axel, his painting, He is Risen, 4827
Enderby brothers, Antarctic voyages promoted by, 6550
Enderby Land, in Antarctic, 6550
Endive, relation of chicory, 2434
End of the Trail, painting by Maud Earl, 663
Endor, view, 3467
Endor, witch of, Samuel's spirit recalled to earth, 1861
Endurance, Shackleton's Antarctic exploration ship, 6560
Endymion, poem by Keats, 2800
 painting by Sir E. Poynter, 3521
Energy, meaning of the word, 1613
 conservation and dissipation of energy explained, 4596, 5442
 in the life of a seed, 1616
 Oliver Lodge's definition, 1614
 Sun as a source of energy, 2618, 3208, 5443
 sculptures, 1613, 1615, 4772
Engine: see Atmospheric engine, Diesel engine, Internal Combustion engine, Railway engine, Reciprocating engine, Steam engine, Steam Turbine
Engine-room, liner's engine-room, 3705
England, appearance of our country before time of man, 1384
 archaeological discoveries, 6997 98
 arms of, and their story, 4983
 beginning of 20th century, 1705
 between the wars, 1823
 Black Death visits, 3637
 change from agricultural to manufacturing nation in 19th century, 1581
 Christianity established under Edwin and Oswald, 2778
 Erasmus's tribute, 3384
 flag of St. George adopted, 6961
 France compared with England in 18th century, 4501
 freedom of people spreads, 4623
 guide to 10,000 places, 7153
 how it looked in Canute's time, 3030
 industrial revolution, 4499
 in the Long Ago, 587
 in the time of the Renaissance, 3880
 life in 18th century, 1332
 Lords and Commons dispute, 1706
 Napoleonic wars, 4372
 nation founded, 592
 Norman Conquest, 708
 peasants' life, 3638, 4256
 Richard Coeur de Lion's reign, 3270
 rivers and canals, 7177
 Second World War, 1941
 seeing our Homeland from the sea, 337
 survey of, 209
 strikes, 1826, 1827
 trade in days before the shops, 3381
 under the Stuarts, 4006
 Union with Scotland, 1205, 1214, 6961-62
 votes for women, 1825
 wettest place in England, 5864
 wild beasts of the 11th century, 3030
 William the Conqueror's work for England, 3150

Wonder Questions
 what does the name mean? 4758
 when was Christianity introduced into England? 5004
 who is John Bull? 6839
 why is gold not found in England? 5371
 why was it called Albion? 4387

Pictures of England
 coasts, 345-50
 hills, 469-73
 oil-drilling scenes, 3086
 rides on English railways, 1589-94, 1711-14, 1831-36
 St. George's Cross, in colour, 6965, 6968
 standards, in colour, 6965, 6968

Maps of England
 counties, 7109-52
 general, in colour, 7081
 historical events, 598, 599
 how formerly joined to France, 5248
 natural features, 726, 727
 physical features, in colour, 7080

See also British Isles, British Empire, and names of places
English, the people of a composite race who inhabit England, development of character, 3638
 natural sense of duty, 2351
English architecture: see British Architecture
English art: see British Art
English Bards and Scotch Reviewers, Byron's reply to criticism, 2596
English bond, what it is, 2414
English catchfly, flower, in colour, 4419
English Channel, sea dividing England and France, once dry land, 1880
 wireless message first crosses, 2092
English language, Bible's influence, 485
 Chaucer's influence, 363
 development, 717, 3640
 laws first written in English, 840
 how many words has the English language? 5251
 which are the most-used letters? 5736
English sedum, plant: see English stonecrop

English Shire horse, 1892
English stonecrop, what it is like, 5764
 flower, in colour, 3643
Engraving, Dürer and Holbein, 1193
 work of Schonauer and Cranach, 1188
Enid and Geraint, painting by Roland Wheelwright, 6945
Ennius Quintus, Roman epic poet and historian, 5428
Enns, Austrian town with walls built with Richard I's ransom, 4546
Ensign, air-liner, at Accra on the Gold Coast, 429
Entebbe, capital of Uganda, 3316
Entente, The, agreement between Britain and France, 4049
Enteromorpha, seaweed, 3413
Enterprise, early steamship, 7738
Environment, what it means, 2029
Eocene Age, great changes that took place, 1753
 animal life, 1753, 1755
Eos, classical demi-goddess, 3518
Eozoon, early sea-creatures, 768
Epact, what is meant by, 6975
Epaphroditus, master of Epictetus, 3240
 receiving lesson from Epictetus, 3241
Ephesus, temple of Diana and its history, 4395, 5498-5500
 sculpture from temple of Diana, 4402
 temple of Diana, 4888
Epictetus, Greek Stoic philosopher, 3129, 6156
 giving lesson to Epaphroditus, 3241
Epicyclic gear-box, of motor-car, how it works, 4328
Epidauria, sacred forest in Greece, 3531
Epidermis, meaning of word, 1430
Epidote, mineral, 1303
Epigonus, Greek sculptor, 4396
Epimetheus, classical demigod, 3519
 Epionis: see Epyornis
Epiphytic plant, what it is, 3058
Epithalamion, Spenser's poem, 742
Epping Forest, Woodland area of Essex, 212
Epsomite, or Epsom salts, 1304

- Epstein, Jacob, British sculptor of Russo-Polish descent, **4788, 4895**
his portrait bust, Nan, **4895**
- Epworth, Lincoln, market-place and church, **5446**
- Epyornis, remarkable egg, **4370**
- Equation of Time, what it is, **5122**
- Equator, rainy seasons, **2744**
trade winds at, **2620**
warmest and coolest seasons, **2742**
does the Equator go round faster than the Poles? **5124**
why is it hotter at the Equator than in England? **1047**
- Equatorial Africa, French, map of industries, **3196-97**
map of physical features, **3198**
- Equilibrium, three kinds, with picture, **4833**
what is stable equilibrium? **3183**
See also Centre of Gravity
- Equinox, meaning of, **2742**
- Equity, meaning of, **4774**
- Er, story of, **6693**
- Erasmus, Desiderius, Dutch classical scholar and theologian, **3760, 4956, 7054**
his views about England, **3384**
Holbein draws for him, **6673**
portrait, **4955**
reading in monastery, **4957**
teaching Charles V, **4957**
teaching scholars at Basle, **4957**
- Erato, classical muse of love lyrics, **3517**
- Erebus, mythological region, **3531**
- Erebus, Sir John Franklin's Arctic exploration ship, **4605**
- Erebus, Mount, Antarctic volcano, **6550**
- Erechtheum, Athens, Greek temple, **5498, 6725**
caryatid from, **4139**
north porch, **5506**
- Erect gracilaria, seaweed, **3416**
- Erg, definition of: see units of measurement, **7071**
- Ergot, rye attacked and cattle infected by it, **1698**
- Ericsson, John, Swedish naval engineer, **3738**
ironclad designed by, **3737**
portrait, **3733**
- Eric the Red, Greenland named by, **3027, 6432**
- Erie, Lake, one of the Great Lakes of North America, **7059**
- Erigeron: see Blue fleabane
- Eris, classical goddess of discord, **3519**
- Eritrea, African territory on the Red Sea, **6754**
map, in colour, **7078**
- Erlanger, Herr, trapped in Great Hole in Kalahari Desert, **6838**
- Ermine, uses of the fur, **793**
picture, **789**
- Ernle, Lord (Rowland Prothero), his book *The Psalms in Human Life*, **2109**
- Ernst, Max, French painter, **3046**
- Eros: see Cupid
- Erosion, various examples, **2004-07**
- Errors of refraction, meanings, **3664**
- Eryngeo: see Sea holly
- Erythrite, arsenate of cobalt, **1303**
- Esau, life-story, **747**
meeting with Jacob, **866, 867**
- Esbjerg, Danish North Sea port, **5149**
- Escalator, what is it? **682**
on London's Underground, **4376, 4380**
how it works, **683**
- Escarbuncle, heraldic charge, **4986**
- Eschenbach, Wolfram von, German poet, **4696**
- Eschscholtzia, development, **6260**
flower, **6384**
seed-cases, **949**
- Escomb, Saxon church at, **5865**
- Escorial, palace built in Spain by Philip II in the 16th century, **5410**
library in, **6364**
view of building, **6368**
- Eskimo dog, related to wolf, **669**
painting, **663**
- Eskimos, Frobisher discovers, **4600**
Kane's expedition assisted by, **6432**
place in British Empire and Commonwealth, **2072**
their food, **910, 2184**
their primitive engravings, **198**
winter huts described, **5816**
mother and child at Baffin Bay, **2200**
- Eskimo village, how to make, **2236**
- Esparto grass, uses of, **2566**
used in paper making, **5488**
baskets and mats made from, **5273**
- Es Salt, Transjordan, view, **6277**
- Essay, famous essay writers, **2969**
definition of, **2969**
- Essen, German iron and steel-making centre, **4426**
- Essex, Earl of, Bacon condemns **4840**
portraits, **1077, 1927**
- Essex, south-eastern English county, description and history, **212**
places in, **7158**
county road map, **7126**
- Essex skipper butterfly, with egg, caterpillar, and chrysalis in colour, **6208**
- Essling, battle of, Napoleon defeats Austrians, **1457**
- Estéban, Bartolomé: see Murillo
- Esterhazy family, Haydn's patrons, **146**
- Esther, how she saved her people, **3225**
denouncing Haman, **3225**
pleading for her people, **3224**
supposed tomb at Hamadan, **6395**
- Etoile, heraldic charge, **926**
- Estonia, Soviet republic bordering the Baltic, **6016**
map, **5904**; in colour, **7091**
- Extremadura, Spanish province, **5270**
quaint village in south, **5281**
- Eternity, lofty subject of thought, **1236**
- Ethelbert, St., king of Kent, listening to Augustine, **613**
- Ethelfrid, king of Northumbria, **2776**
- Ethelred the Unready, Danes take England from, **596, 707**
- Ethelwulf, king of West Saxons, father of Alfred the Great, **2905**
- Ether (in medicine), early experiments with, **2508**
- Ether (of space), colour distinguished through vibrations of, **3783**
light produced by movement in, **4594, 5818**
space filled by, **12, 105, 1347**
what is the ether? **2788, 4099**
- Ethiopia: see Abyssinia
- Ethiopian war-hog, **1657**
- Ethnology: see Race
- Etive, Loch, Scotland, **1338**
- Etna, volcano in Sicily, **2245, 4910**
effect of eruption, **2248**
- Eton College, architecture of, **6237**
founded by Henry VI, **960**
arms, in colour, **4989**
quadrangle, **6250**
- Etruscans, early civilisation, **6983**
pottery and enamel work, **6737**
bronze vessel, **74**
figures on sarcophagus, **4900**
relics, of, **6993**
- Ettrick Shepherd: see Hogg, James
- Etty, William, English painter, **2545**
his *Lute Player*, **2554**
- Eucalyptus tree, adaptation to dry climate, **1011, 2621**
flowers, leaves, and fruit, **2683**
grows to a great height, **3052**
blossom and leaves, **2683**
in Australia, **2682**
size compared with giant seaweed, **700**
- Eucheatus, beautiful horned beetle, in colour, **6336A**
- Eucken, Rudolf Christoph, German writer and philosopher, **4700**
- Eucla Basin, Australia, vast artesian area, **2569**
- Eucleides: see Euclid
- Euclid, Greek geometrician, **3119**
his famous book, *The Elements*, **986**
portrait, **3119**
- Euclid of Megara, Greek philosopher, **3120, 4837**
addressing his pupils, **3123**
- Eugen, Prince, influence in Swedish art, **3398**
- Eugene, Prince of Savoy, Austrian general in the war of the Spanish succession, freed Hungary from the Turks, **4296**
- Eugenics, Sir Francis Galton, the founder of the science, **4130**
- Eupackardia calleta of Mexico, caterpillar, in colour, **6209**
- Eupetaurus cinereus, flying squirrel, characteristics and home of, **1034**
- Eupholus, Bennett's, beetle, in colour, **6336A**
- Euphranor, Greek sculptor, **4270**
- Euphrates, river flowing through Iraq, **6266**
beginnings of civilisation on Euphrates plain, **6870**
- Euphronios, vase painter of ancient Greece, **324**
- Euphrosyne, one of the Graces, **3517**
- Eupyrochroa, beautiful beetle, in colour, **6336A**
- Eurasians, who are they? **4267**
- Eureka, Greek for I have found it; discovered at last. Made popular by Archimedes, **189**
- Euripides, Athenian poet, **3124, 5185**
portrait, **5179**
- Europe, second smallest of the continents, British Isles once joined to Continent, **5248**
British flags of, **6963**
Economic Commission for Europe, Uno, **6483**
ice covering in Pliocene Age, **1877, 1880**
languages chiefly come from Aryan stock, **2943**
monarchies fall in 1st World War, **4622**
need for a seaway to the East, **772**
rise under Roman Empire, **1405**
submerged in the Jurassic Age, **1508**
water-covered in Cretaceous Age, **1633**
which are the smallest countries in Europe? **6857**
maps, in colour, **7079, 7090**
See also under separate countries
- European art, artists of 100 years reviewed, **3397**
modern trend, **3398**
- European Recovery Programme, **6483**
- Eurus, mythological name for south-east wind, **3519**
- Euryale, one of the Gorgons, **3530, 5736**
- Eurydice, in story of Orpheus, **6929**
with Orpheus, painting by Corot, **6929**
with Orpheus, sculpture, **4402**
- Eurypterids, lobster-like creatures in Devonian Age, **1133**
- Eusemia bisma of India, caterpillar, in colour, **6210**
- Eustachian tube, what it is, **1920**
- Euterpe, mythological muse of lyric poetry, **3517**
- Eutychides, Greek sculptor, **4403**
- Euyuk, Asia Minor, ancient palace found, **6872**
- Evans, Sir Arthur, English archaeologist, excavated the Minoan ruins in Crete, **322, 4023, 6985**
- Evans, Petty-officer Edgar, Antarctic companion of Scott, **6559**
portrait, **6560**
- Evans, Edward R., in Antarctic, **6548**
- Evans, Mary Ann: see Eliot, George
- Evaporation, creates electricity, **238**
of water, **2865**
- Evaporator, use on board ship, **3574**
- Eve, banished from Eden, **248, 246**
- Evelina, novel by Fanny Burney, **2348**
- Evelyn, John, English author and diarist, **1850, 3859**
praise of holly hedge, **4041**
rhinoceros-horn superstition, **1774**
discovers Grintling Gibbons at work, **1851**
meets Samuel Pepys, **1848**
- Evelyn Hope, Browning's poem, **3458**
- Evening campion, member of genus *Lychnis*, **6492**
what it is like, **4290**
flower, in colour, **4285**
- Evening primrose, member of genus *Oenothera*, **6492**
new varieties evolved, **1204**
relation of willow herb, **5892, 6012**
four species, **1203**
- Everest, highest mountain in the world, in the Himalayas, **2809, 6512**
- Everlasting pea, member of genus *Lathyrus*, **6492**
how it differs from sweet pea, **6258**
member of Vetchling family, **4416**
flowers, in colour, **4905, 5643**

Evesham, Epiphanius, English sculptor, 4766
Evil, truth about it not known, 494
Evolution, Darwin's theory, 1586
 human body and evolution, 3585
 immortality and evolution, 4086
 importance of small changes, 1204
 of animal life, 79
Evora, ancient Portuguese city; pictures, 5412, 5413, 5414
Ewald, Carl, Danish writer of fairy tales, 404, 4939, 399
Ewald, Herman, novelist, 4939
Ewald, Johannes, Danish poet, 4939
Ewer, 16th-century silver ewer, 6734
Evins, Dr. A. J., discoverer of M & B 693 (sulphapyridine), 2623
Excalibur, King Arthur's sword, 6941, 6943
Excavation, discoveries in Egypt, 6860
 Mesopotamian discoveries, 6863
 mechanical excavators, picture-story, 3031-34
 See also under names of countries and places
Excise duty, what it is, 4659
Exeter, capital of Devonshire, arms of the city, in colour, 4990
 view from canal, 1713
Exeter Cathedral, Bishop Stapleton's throne, 6732
 example of Decorated period, 5873
 view of exterior, 1712
 west front, 5879
Exeter College, Oxford, arms, in colour, 4983
Exhibition, the Great, 1851, in reign of Queen Victoria, 4621
Exmoor, moorland tableland in Devonshire and Somerset in which the Exe rises, 210, 468
Expectation, hope compared with, 2105
Expiration, physical: see Breathing
Explosion, land mine fired, 4345
Exports, United Kingdom's exports, 5264
 what we mean by, 6126
Express engines, in colour, 1041-43
Expulsion from Eden, painting by A. T. Nowell, 246
Eyam, heroism of inhabitants, 2020
Eyck, Van: see Van Eyck
Eye, organ of vision, 3661, 3781
 balance helped by, 3405
 blood vessels necessary to sight, 442
 how to remove foreign bodies, 6178
 insect's eyes have many facets, 5001
 protection, 59, 3662
 retina, structure and use, 3781
 sight due to refraction, 5937
Wonder Questions
 are ear-rings good for the eyes? 929
 are pictures printed on the eyes? 5250
 can a fly see all ways at once? 5001
 can we always believe our own eyes? 127
 how can we see with our eyes shut? 3161
 is there the sign of a lost eye in our brain? 4893
 what are our eyes made of? 5863
 what is a cataract of the eye? 3649
 what makes our eyes blink? 6603
 what makes the pupil vary in size? 5123
 why cannot we see very small things with our naked eyes? 5370
 why cannot we sleep with our eyes open? 6103
 why cannot we walk straight when we shut our eyes? 4518
 why does an onion make the eye water? 4639
 why do our eyes sparkle when we are merry? 1182
 why do we see lights when we get a blow on the eye? 5368
 why have we two eyes? 1046
Pictures of the Eye
 diagrams of a man's, a fly's, and a fish's eye, 3662
 glands where tears are made, 3664
 interior of eyeball, 3781
 muscles and optic nerves, 3660, 3663
 retina, portions magnified, 3781
 See also Sight
Eyebright, of genus Euphrasia, 6493
 food absorbed from grass, 206

flower, in colour, 4419
Eyebrows, what are they for? 309
Eyed anemone, in colour, 1553
Eyed ladybird, in colour, 6336
Eyelet, anemone, in colour, 1554
Eylau, battle of, Napoleon defeats Russians, 1456
Eynsford Castle, scene of quarrels between Henry II and Becket, 720
Eyre, Edward John, English explorer, 6068, 6063
 crossing Australian desert, 6070
Eyre, Lake, South Australian lake, 6068
Eze, France, general view, 4055
Ezekiel, considered holy living to be man's great achievement, 913
 Michael Angelo's picture, 913

F

Fabius Maximus, Roman general, 4352, 5426
Fabre, Henri, silk-moth disease explained by, 6202
Fabricius, Hieronymus, Italian anatomist, 2506
Face, how to draw hundreds of faces, with picture, 505
 why does a face in the mirror seem crooked? 5981
 why does our face change when we think hard? 6354
 why does our face turn white with fright? 6100
 why do our faces keep warm without clothing? 4022
Face in Merlin's Mirror, story, 5922
Face No Man Could Look On, story and picture, 4987
Factory, use in England, 4499
 conditions of workers improved in 19th century, 1582
 cotton manufacturing the beginning of factory system, 172
 fresh air laws need revision, 1323
 why has a factory a tall chimney? 1796
 why has a factory chimney a rim round the top? 5864
Factories Act, protection of workers under, 6255
Faed, Thomas, Burns and Highland Mary, painting by, 2223
Faerie Queene, Spenser's most famous poem, 740, 5207
 stories from, 5919
 illustration, 5923
Faggot stitching, how to make, with pictures, 2735
Fahrenheit thermometer, 4835
Fair, why are some people fair? 4514
Fairbairn, John, South African poet, 4206
Fairfax, Thomas, Lord, English soldier and parliamentary leader, 522, 521
Fairground Model That Works, toy, how to make, with pictures, 4952
Fairy bluebird, Indian, in colour, 3262
Fairy Maid of Van Lake, story, 2631
Fairy ring, what makes a fairy ring? 1440, 2542
Fairy's Revenge, story, 2386
Fairy tales, and their writers, 399
 Hans Andersen's dream, 405
 painting by J. J. Shannon, 3655
 See also Stories
Fairy Tulips, legend, 1524
Faith, importance and power of, 1109
 figure in Rouen cathedral, 4656
 painting by Frederick J. Shields, 1111
Falcon, habits and food, 3626
 speed of flight, 6852
 Greenland falcon, 3636
 peregrine falcon, 3633
 used for hunting, 1903
Falcon and the Hen, fable, 6934
Falconer, Edmund, Irish actor and writer of plays, 1266
Falconet, Etienne Maurice, French sculptor, 4646
 his sculpture, Cupid, 4899
 Reading and Writing, sculpture, 4650
Faiguère, Jean, French sculptor and painter, 4647
Falkirk, Scottish town, arms, in colour, 4990
Falkirk, battle of, 894
Falkland Islands, British group off the Argentine coast, 3558

sheep and cattle raising, 7025
 wolf's presence a mystery, 539
 flag, in colour, 6967
 Port Stanley, the capital, 3562
Falkland Islands, battle of, 5582
Falling, why does a falling object turn round? 3890
Fallow deer, two species in Great Britain, 1402
 herd in English park, 1401
False acacia: see Locust tree
False cyperus, what it is like, 5892, 5891
False scorpion, under microscope, 1915
Falstaff, Sir John, humour of Shakespeare's character, 982
 in search of recruits, 1104
 reviewing his followers, 1105
Famagusta, chief port of Cyprus, 3420
Fame, what it means, 1266, 1269

FAMILIAR THINGS

Here follow actual chapter headings: subjects dealt with will be found in their proper places in the index
 Iron Foundations of England, 49
 Cotton, The Flower that Clothes Us, 171
 Picture-story of Rope, 179
 The China on the Table, 301
 Airways, 429
 Footpaths in the Air, 547
 How We Got the Piano, 675
 Wool and Its Story, 799
 The Sponge and What It Is, 917
 Engines of Britain's Railways, 1041
 The Remarkable Story of Rubber, 1165
 A Piece of Paper, 1291
 Picture-story of the Motor Tyre, 1409
 A Grain of Salt, 1539
 Picture-story of a Candle, 1669
 Picture-story of a Brick, 1789
 100 Peeps Through a Microscope, 1909
 What Lies Behind Your Pen, 2033
 Picture-story of a Lead Pencil, 2039
 Roads and Their Makers, 2157
 Picture-story of a Cup of Tea, 2283
 Picture-story of Sugar, 2288
 The Newspaper, 2403
 Putting a House on a Hill, 2525
 Picture-story of a Ship, 2647
 Picture-story of a Bell, 2779
 Knives and Forks, 2909
 Man's Mechanical Giants, 3031
 Nothing Like Leather, 3153
 The Real Wealth of a Nation, 3271
 Picture-story of Bookbinding, 3385
 Railway Engines of Many Lands, 3509
 Picture-story of a Box of Matches, 3641
 Picture-story of the Motor-Car, 3761
 Picture-story of Glass, 3881
 The Age of Plastics, 4009
 Picture-story of the Gas-Meter, 4127
 Picture-story of Sports' Equipment, 4249
 Man's Life Underground, 4375
 A Glass of Water, 4503
 The Post Office and How It Works, 4625
 The Camera and How It Works, 4749
 Canals and How They Work, 4865
 The Pomp of Heraldry, 4983
 Our Friend the B.B.C., 5107
 Picture-story of a Railway Engine, 5235
 A Tree and What it Becomes, 5349
 Picture-story of a Pair of Shoes, 5481
 Picture-story of Water Power, 5601
 Picture-story of Our Fisheries, 5723
 The Stones of Our Cities, 5845
 Picture-story of Irrigation, 5969
 Picture-story of Silk and Rayon, 6091
 The Human Moles at Work, 6213
 Picture-story of an Aeroplane, 6337
 Picture-story of Pins and Needles, 6463
 Picture-story of the Diver's Work, 6587
 How the Cinema Came, 6703
 The Story of the Clock, 6831
 National Flags and Emblems, 6961
Family Allowances Act (1948), 6256
Fan, electric fans on ships, 3574
Fan, sea, sea creature, 6697
Fan blowers, 6351-52
Fancy Dress, ideas for, with picture, 5437
Fan Race, game, 508
Fantail pigeon, 4118
Faraday, Michael, English chemist and scientist, 5350, 6313
 theory about light, 5690
 in London streets, 5331; portrait, 5323
Far East, Japan begins war in, 1943, 1948

- Farge, John Ia, American painter, 3287
 Farmer and his Sacks, story, 289
 Farmer and his Sons, fable, 4116
 Farmer and the Stork, fable, 3744
 Farmer's boy, rhyme pictures, 1957
 Farming, what is ley farming? 2663
 Farm tractor, why it has deeply grooved tyres, 5493
 Farnese Bull, sculpture, 4396, 4399
 Farnese Hercules, fine sculpture by Glycon, the Athenian, 4404, 4401
 Farningham, Kent, 2160
 Faroe Islands, Danish islands in the North Atlantic, 518, 5149
 Farquharson, Joseph, Scottish 19th-century painter, 2545
 Yon Yellow Sunset, painting, 3656
 Farrar, Dean Frederic W., on St. Paul's, 5809, 6054, 6298, 6537, 6664
 See also Poetry Index
 Farrer, William, introducer of the wheat Bobs, 1578
 Farther India : see Straits Settlements and Malaya
 Fasces, heraldic charge, 4986
 Fascist, party in Italy, 4788
 Fat, butter most easily digested, 2309
 goat's milk contains a great deal, 2307
 how digested, 2063
 what is the difference between fat and oil? 5127
 Fata Morgana, mirage in Italy, 4793, 3165
 Watts's painting in Leicester Gallery, 2546
 Fat and Lean Fowls, fable, 3992
 Fates, The, or Moirae, 3517, 6937
 painting by J. M. Strudwick, 3528
 picture by Michael Angelo, 690
 Father and Son, story, 6568
 Father Consoler, sculpture, 5254
 Father-lasher, fish, in colour, 5098
 Father of Modern Painting, Cimabue's title, 4716
 Fathom : see nautical measures, 7069
 Fathometer, used on ships for depth sounding, 3576
 Fatigue, sculpture by Emil Renker, 5254
 what happens when we get tired? 5363
 Fatigue of metals, what is meant by, 3035
 Fat-tailed sheep, 1279
 Faun, mythological demigod, 3530
 Faust, Goethe's great poem, 4693
 who was Faust? 5373
 Faustina, wife of Antoninus Pius, 2878
 Faustina, wife of Marcus Aurelius, 2879
 Faux-Namiti bridge, in China, 552
 Fayal, Azores, Raleigh captures, 5207
 Fear, the controlling emotion, 4279
 instinct's part in feeling of fear, 1679
 Fea's frog, amphibian, 4743
 Feathered volucella, in colour, 5714
 Feather grass, seeds, 946
 Feather-like laurencia, seaweed, 3414
 Feathers, how to make a collection, 2612
 why do birds cast them? 6232
 why does a feather ever settle? 3164
 Feathery bryopsis, seaweed, 3414
 February, origin of name, with picture, 5336
 Federated Malay States, arms, in colour, 4985
 flags, in colour, 6967
 See also Malaya and Straits Settlements
 Federov, M. K., Russian scientist, Arctic ice-floe experiments, 6444
 Feed rolls, adjustable, 6351
 Feet, what happens when one's foot goes to sleep? 5984
 why do they not wear away? 6468
 Fehr, Henry C., British sculptor, sculptures, 4770
 Feisal I, first king of Iraq, 6266
 Feisal II, king of Iraq, 6266
 Feldmann, L., his painting of the Holy Family, 3592
 Felix, Roman who tried St. Paul, 6540
 Felkistowe, Suffolk, seafront, 348
 Fellow of the Name of Rowan, story, 6949
 Fellows, Charles, discovered Lycia, Ancient Greek town, 6987
 Feliste rocks, on coast of Arran, 2005
 Felsted School arms, in colour, 4989
 Felt, how to make little gifts in, 6175
 Felton, Mrs., British fleet warned by, 5582
 Fennec fox, 536
 Fennel, classification, 5763, 6492
 flower, in colour, 5643
 Fenris, the story of, 1274
 Fens, low-lying district in eastern England, description and history, 213
 Ferdinand, king of Bulgaria, 5774
 Ferdinand the Catholic, first king of all Spain, 1307, 5274
 Fergusson, James, helped excavation in Assyria, 6870
 Ferments, their use in the body, 2181
 Fermi, Professor Enrico, Italian scientist, radio-active substance discovery, 6312
 Fern, belongs to Pteridophytes, 3412
 early form of plant life, 193
 in Devonian Age, 1136
 medicinal use, 1439
 spores and their function, 203, 1796
 varieties, 704, 1260
 how does a fern grow? 1796
 Pictures of Ferns
 cross-section, under microscope, 1910
 group of Australian, 2373
 life-story of male shield variety, 833
 species of British ferns, 1797
 spores under microscope, 1910
 Fernando Po, island of Spanish Guinea, 6754
 Fern basket, how to make a fern basket, with picture, 2361
 Ferret, species of polecat, 793, 788
 Ferrier, Sir David, Scottish physician, 2628; portrait, 2623
 Ferry, Train, Harwich and Zeebrugge, 5648
 Ferruzzi, Robert, his painting, Little Madonna, 1664
 Fertilisers, made from the air, 856
 Ferula, asafoetida obtained from, 2689
 Fescues, group of grasses, 2186
 pictures, 3305, 3309
 Festus, St. Paul brought before, 6540
 Fetid hawk's beard, what it is like, 5266
 flower, in colour, 5395
 Fetid iris, what it is like, 4780
 flower, in colour, 4907
 fruit, in colour, 3666
 Fetterlock, heraldic charge, 926
 Feudal system, the holding of estates by military service, 3505
 checked by Louis IX of France, 2252
 under William the Conqueror, 708, 3151
 Feverfew, of genus Matricaria, 6493
 North American variety in Britain, 1066
 varieties that grow in cornfields, 4542
 Fez, city of Morocco, 6749
 mosque, 6760
 Fibrous-rooted wheat grass, 3310
 Fiddle, how to make one, with pictures, 249
 why does a fiddle string change its note when we hold it down? 4021
 why has a fiddle two slits? 3649
 See also Violin
 Fiddle-dee-dee I rhyme, picture, 4933
 Fidelity, painting by Greuze, 1688
 Field, Eugene, American poet, a famous monument in Chicago, 1091
 portrait, 4201
 See also Poetry Index
 Field bindweed, what it is like, 4544
 flower, in colour, 4662
 Field cricket, insect, in colour, 5713
 Fieldfare, bird of Thrush family, 3028
 migration of, 3026, 223
 picture, 3015
 Field flea-wort, flower, in colour, 5396
 Field gentian, what it is like, 4416
 flower, in colour, 4420
 Fielding, Copley, English painter, 2425
 his painting, The Vale of Irlthing, 2423
 Fielding, Henry, English novelist and writer of plays, 2348, 2349
 Field madder, flower, in colour, 4664
 Field mellinus, insect, in colour, 5714
 Field mouse, damage done by, 1085
 Field of the Cloth of Gold (1520), meeting between Henry-VIII and Francis I of France near Guines, picture, 1074
 Field rose, fruit, in colour, 3669
 Field scabious, relation of teasel, 4544
 flower in colour, 4664
 Field scorpion grass, in colour, 4286
 Field spaniel, 668
 Field spider, tubular nest of, 5599
 Fields, James Thomas : see Poetry Index
 Fiery ruby-tailed fly, in colour, 5714
 Fiery-starred syrphus, in colour, 5714
 Fiesole, Mino da : see Da Fiesole
 Fiesole, ancient Etruscan city in Italy, Etruscan relics found at, 6994
 Fife, David, introduced Red Fife wheat into Canada, 1578
 Fife, maritime county of eastern Scotland, lava on coast, 2005
 Fifteen-spined stickleback, fish, in colour, 5100
 Fig, construction and fertilisation of flower, 1940
 nourishing food, 1935
 cultivated fig, whole and in section, 1937
 life-story, 1934
 plantation in California, 1936
 tree in Teneriffe, 1937
 wild variety, 1937
 Fighter-planes, types, 4689
 Figures, did the Arabs give us our figures? 6597
 verses made with figures and letters, 506
 the wonders that figures will do, 2114
 Figwort, bogland members of figwort family, 5892
 downland species, 5268
 members of family in cornfields, 4543
 stream figworts, 6011
 knotted, in colour, 6127
 water, 6009
 yellow, in colour, 5143
 Fiji Islands, group of about 250 British Pacific islands, 3426
 arms of the islands, in colour, 4985
 cocoa tree with ripe pods, 2315
 flag, in colour, 6967
 house of a chief, 3435
 native dancers, 3436
 Suva, 3433, 3435
 map, in colour, 7106
 Filbert, nut, 2063, 2067
 File-fish, oyster-eating species, 5234
 picture, 5229
 File-shell, habits, 6582
 Filipinos, race of Philippine Islands, 6514
 Filling the gap, game, 3724
 Film, plastic film used in motion pictures, 4014
 how cartoons are made, 3165
 See also Camera, Cinema, and Photography
 Filter, one simple to make, 1123
 Filter-bed, at Kempton Park reservoir, 4508
 Fin, of fish, development, 452, 1133
 Finance Bill, in Parliament, 4537
 Finch, bird family, 2896, 2902
 speed of flight, 6852
 bramble, 2892
 Gouldian, in colour, 3144
 Finest Thing in the World, story and picture, 5955
 Finfoot, characteristics, 4004
 Fingal's Cave, Isle of Staffa, view, 349
 Finger, bones of our fingers, 1694
 touch-bodies in them, 1433
 what are our finger-nails for? 5123
 why are they not the same length? 5492
 bones and ligaments, 1567
 muscles, 1810
 structure of nail, 1429
 Fingered laminaria, seaweed, 3414
 Finger-prints, why do they photograph a man's finger-print? 6728
 Finland, republic of northern Europe, 5153
 forest land, 2370, 5153
 flags, in colour, 6973
 scenes, 2370, 5169
 map, 5170 ; in colour, 7091
 Finsen, Niels, Danish physician and scientist, 2628
 Flood, Norway's deep inlets, 5864
 pictures, 5158-59
 Fiorelli, Italian in charge of later excavation of Pompeii, 6995
 Fir club-moss, flowerless plant, 3408
 Firdausi, chief Persian epic poet, 5676
 Fire, earliest ways of making it, 1674
 great fire of London, 1212, 1851, 4227
 haystack and heath fires, 5733

man's knowledge of first great step in science, 6547
operation of fire alarms, 855
precautions on ships, 3576
what to do in case of fire, 6668

Wonder Questions

can a fire light itself? 5733
does the Sun put it out? 6602
does smoke come from it? 6234
how did men find it? 3647
is the heat of it the same as the heat of the Sun? 6345
what makes fire change colour? 4394
what makes the firelight dance? 5124
why does celluloid catch fire so easily? 4894

why does the fire go out? 183
why is a fire pail filled with sand? 4760
why is coal the best thing for making a fire? 6596

why is it hot? 818
different ways of making fires, 167, 1673, 1674, 1675, 3647

oil storage tanks on fire, 3088
Firebox, in railway engine, 3947
Fireclay, use in gas retorts, 3334

Fire damp: see Methane
Firefly, radiance of, 6333
in tropical forest, 6327

Fireman, portable radio used by, 2218
firemen using hose, 4595
Fireworks, use by chemists, 3889

how do they get their colours? 3889
Brock display, 3889

Fir-rape, member of Heath family, 4782
flower, in colour, 4908

First-Aid, in the home, 6178

First Axe, story with picture, 1521

First Lesson, The, story, 1890

First Men in England, story with picture, 1763

First World War: see World War, First
Firth, Cecil, Egyptologist, discovered oldest stone building known, 6863

Fir tree, different kinds, 3789
holes made by mistletoe, 2784

Fischer, Emil, makes synthetic peptone, 4348

Fish, British coast's inhabitants and visitors, 5095
backbone first found, 42, 451, 1011

balance, 3406
brain not benefited by eating fish, 2559
cold-blooded, 326, 542

colouring brilliance explained, 4857
deep sea, 5227
early forms, 1133, 1257

electric shocks from, 233
food, 86, 4976
gills, 184, 326

how to cook, with pictures, 997
low orders, 5343
lungs, 1136

origin, 10
oxygen required, 4856
river species, 4975

swimming speeds, 6352
can fishes fly? 3166
can fishes see and hear us? 184

does a fish feel? 929
do fishes sleep under water? 4994
do fish fall from the sky? 6101

has a fish a voice? 6230
how do fish live in a frozen pond? 682
how fast does a fish swim? 2042

how long do fish live? 6229
what does a fish under water see? 4514
why are fishes not salt when caught? 1046

why cannot fishes live on land? 184
why does not sea water make fishes thirsty? 3162

why do fish die in a jar of water? 3038
will fishes turn into animals? 60

Pictures of Fish

around British Isles, in colour, 5097-5100
brain compared with that of other creatures, 2931

British, 5105
deep sea fish, 5227, 5229, 5231, 5233
early forms, 1133, 1135, 1257

eye of, diagram, 3662
fishes in British rivers, in colour, facing 5197

food value, 2181
ocean species, in colour, 185

place in scale of life, 79
what it sees when it looks up, 4515
Fishbone-stitch, and picture, 2984

Fisher, Herbert A. L., English historian, 3828

Fisheries Board, Scotland, flag, in colour, 6966

Fisheries Guard, North Sea, flag, in colour, 6966

Fisherman of St. Ives, painting, 3403

Fisher marten, 792

Fishery Research, flag, in colour, 6966

Fishing industry, story in pictures, 5723
history influenced by, 5106
pictures, 5723-31

Fish-owl, adapted to mode of life, 3504

Fish-plate, in engineering, 3948

Fitch, John, American steamship inventor, 3734

Fittleworth Mill, Sussex, 1593

Fitzball, Edward, English writer of plays and songs, 1265, 1261

FitzGerald, Edward, English poet, 5675, 4077, 212

See also Poetry Index

Fitzpatrick, Sir Percy, suggested the two-minute silence, 6724

Fitzwilliam Hall, Cambridge, arms, in colour, 4938

Fiume, Italian port, 4556

Five-bearded rockling, fish, 5105

Five Great Questions, story, 3884

Fives, how to play, with picture, 5564

Five-spot scaphidomorphus, beetle, in colour, 63364

Fizeau, French scientist, method of measuring light's speed, 4993

Flag, English-speaking people's flags and their story, 6961
game, 3721

how to make a living flag, 128

puzzle of the Siamese flag, 5314, 5438

signals at sea, 5247

United States flag described, 6962-63
how did the French flag get its colours? 5736

is there a rule in the colour of flags? 5246

Pictures of Flags

air forces insignia, in colour, 6980
all nations, in colour, 6972-75

British Empire, in colour, 6965-68
fourteenth-century, in colour, 6978
historical, in colour, 6980

international signals, in colour, 6980
seventeenth and eighteenth centuries, in colour, 6979

steamship lines, in colour, 6977
United States, in colour, 6969-71

yacht clubs of world, in colour, 6976
See also under names of places and special names, as Union Jack

Flagellata, an order of protozoa, 6957
Flame, colour of explained, 3889

vowel flame by which sound can be studied, 6429

why does a flame rise to a thing held above it? 6599

Flamingo, characteristics, 3756
flocks in Bolivia, 7020; group, 3755

Flamsteed, John, English astronomer, 3613, 3611

Flanders, Belgium, 800, 5646; view, 5656
Flandrinn, Jean, French painter, 1808
his painting, Madame Vinet, 3778

Flandrinn, Paul, his painting, Suffer the Little Children, 5436

Flanged expansion joint, 6350

Flash-lamp, pocket, 1100

Flat book dragon-fly, in colour, 5713

Flat fish, life-story, 5104

Flat foot, what is meant by, 1895

Flatholm, Bristol Channel, early wireless messages sent from, 339

Flaubert, Gustave, French novelist, 4457
Flax, its story, 2562

cultivation methods, 2564

New Zealand flax: see Phormium

Tirolean Flax Grower, story, 4483

uses of, 1439, 2562

picture of plant, 2560; in colour, 2685

Flax-leaved goldlocks, 5519

flower, in colour, 5641

Flax lily: see Phormium

Flaxman, John, English classical sculptor, 4767

designs for pottery, 3862; portrait, 3855

Flax-seed, what it is like, 5892
flower, in colour, 6128

Flea, infection carried by, 6090
under microscope, 1913

Flabane, name explained, 5760
use in medicine, 5890

blue, 5759
yellow, in colour, 5141, 6378

Fleawort, what it is like, 5265

flower, in colour, 5396

Flecker, James Elroy, English poet, 4083

Fleming, Sir Alexander, discovery of penicillin, 2628, 4018; portrait, 2628

Fleming, Sir John Ambrose, English electrical engineer, 3364
invents the wireless valve, 2093, 2218

portrait, 3363

Fleming, Peter, British writer, 3829

Flemings, name given to the inhabitants of Flanders, 3383

woolworkers of fourteenth century, 951

Flemish art, the school that made everyday things great, 1051, 1421

impression on early French art, 1681

influence of the Van Eycks, 1052, 1056

Rubens and Van Dyck, 1421

sculpture, work of Claus Sluter, 4644

Flemish bond, what it is, 2414

Fletcher, John, English poet and writer of plays, 980

Fleur-de-lys, in arms of England, 4984
what is it? 4267; heraldic charge, 928

Flexible steam joint, 6350

Flight into Egypt, painting, by Giotto, 570

Flinck, Govaert, his painting, The Civil Guard, 3657

Flinders, Matthew, English navigator, 2382, 2377

Flint, how did the flint get into the chalk? 4018

Flint implements, in Stone Age, 194

Flint, Russell, English artist, 2678

his painting, Four Singers of Vera, 2669

Flixweed, member of genus Sisymbrium, 6491

seed productivity, 1065, 3179, 3888

Floating fox-tail, grass, 3310

Floating meadow grass, 3310

Flodden, battle of, fought between the English and the Scots (1513), 1082

Flood: see Deluge

Flood Boatman of Budapest, The, story with pictures, 3371

Floodlighting, at airport, 435
Buckingham Palace, floodlighted, 1099

Flora, Roman goddess of flowers, 3520

Floralia, Roman festival, 3520

Florence, city of Italy, 565, 4715, 4913

Baptistry doors, 4522, 5993

Brunelleschi's work, 4720, 6110

campanile, 4716, 4720, 5993

cathedral, 5992

Della Robbia's work, 4524, 4533, 4729

Donatello's work in, 4523

frescoes by Andrea del Sarto, 820

frescoes by Giotto, 568, 573

Michael Angelo's work in, 694, 4534, 6113, 6186

palaces, 6108, 6111

Uffizi Gallery, 820, 4272, 4278, 6110

Pictures of Florence

Baptistry gates, a panel, 4521

Baptistry, general view, 4724

Burning of the Vanities, painting, 1388

campanile, Giotto's Tower, 4724, 4726

cathedral, general view, 4727

column of a palace, 71

Della Robbia's Singing Gallery, 4532

Donatello's Singing Gallery, 4532

Elizabeth Browning's tomb, 3454

fountain in garden, 4728

Guadagni Palace, 6117

incense-holder from Pitti Palace, 71

industrial scenes in olden times, 4717

loggia of San Paolo, 6109

Medici Chapel, exterior, 6117

Medici Chapel, interior, 4723

Medici tombs, 4723

Michael Angelo statue, 6182

monuments, 4728

old pavement from, 74

Pitti Palace, rear, 6107

Ponte Vecchio, 4724

Riccardi Palace, 6122

- S. Spirito Church, 6109
 sixteenth-century ivory carving, 70
 Spanish chapel in Santa Maria, 4725
 Strozzi Palace, 6120
 Vecchio Palace, 4724, 4726
 views, 4726-27
 window in St. Croce, 70
Florentine art, Italy's Golden Age, 568, 687, 819
 artist who led up to Leonardo da Vinci and Michael Angelo, 565, 4522
 Giotto's school, 568, 573
 Greek influence, 688
 Leonardo da Vinci and Michael Angelo
 687, 4533
 Raphael and his time, 819
 Siennese school's influence, 568
 series of pictures, 567-72, 689-95, 821-824, 4525-32
 See also names of artists
Florentine Singer, sculpture by Paul Dubois, 4652
Flores, Azores, Grenville's last fight, 5208
Floreys, Sir Howard, penicillin development, 4018
Florican, Bengal, bird, 3869
 in colour, 3264
Florida, American Atlantic State, 1020
 Long Key Island, scene, 3807
 sponge industry, 918
 Maine, street scene, 3802
 State flag, in colour, 6970
 United States' oldest house, 3689
Florin, invented by Sir J. Bowring, 1760
Florizel, Prince, in Shakespeare's *A Winter's Tale*, 6052
Flote grass, 583
Flounder, fish, description, 5105
 in colour, 5100
Flowering rush, classification, 6008, 6497
 picture, in colour, 6129
Flowerless plant: see Cryptogam
Flower-loving hoplia, in colour, 6336
Flower pecker, in colour, 3141
Flower-pot, how to make flower-pots from old tin cans, with pictures, 3599
 why has it a hole in the bottom? 5619
Flower-pot race, game, 3107
Flowers, the following chapters describe the flowers according to where they are mostly to be found
 Bogland, 5887 Hedgerow, 4283
 Cornfield, 4541 Meadow, 4413
 Downland, 5265 Mountain, 5517
 Garden, 6257 Seaside, 5759
 Heath, 5019 Stream, 6007
 Woodland, 4779
 annuals, 4541
 around the house, 5314
 beauty in the plant world, 84
 biggest flower in the world, 206
 classes of flowering plants, 705, 6489
 closing of flowers at night, 585, 586
 colours at different seasons, 332
 cultivation effects, 6257
 different parts, 332
 double flowers, 831
 fertilisation by bees, 5837
 how to make paper flowers, 5813
 how to preserve flowers, 3347
 legends about flowers, 4734, 6813
 life-story of a flower, 332
 little stories about, 4734
 movements that help fertilisation, 586
 perennials, 4541
 pistillate, what they are, 832
 pollination methods, 832
 seed: see Seed
 staminate, what they are, 832
 structure of, 831
 why the Sun does not fade them, 2540
Wonder Questions
 are there flowers in the Antarctic? 5980
 can flowers talk to each other? 2418
 does a flower sleep at night? 6106
 how do flowers come out of small seeds? 6355
 how does a flower grow? 4758
 how does colour get into a bud? 2414
 were all flowers once wild? 2661
 where do they go in winter? 6602
 why are some sweeter at night? 4893
 why do they vary in colour? 6347
Pictures of Flowers
 arrangement on stems, 6495
 bogland, 5889, 5891; in colour, 6127
 cornfield, 4540; in colour, 4661
 downland, 5265, 5267; in colour, 5393
 fertilisation by insects, in colour, 2045
 garden, 6257, 6377
 heath, 5019, 5021; in colour, 5141
 hedgerow, 4290; in colour, 4285
 meadow, 4412; in colour, 4417
 mountain, 5517, 5521; in colour, 5641
 seaside, 5759, 5761; in colour, 5643
 stages in growth, 203
 stream, 6007, 6009; in colour, 6129
 ways of folding buds, 6495
 wonder of a flower, 83
 woodland, 83, 4778; in colour, 4905
 See also Plant Life; and names of flowers
Fluid, pressure of, 5197, 5201
Fluid Flywheel, of motor-car, how it works, 4328
Fluorescent lighting, what it is, 1299; picture 1299
Fluorine, quantity in the world, 4345
 an element, 4222
 boiling point, 4998
Fluorite, in colour, 1302
Fluorspar, mineral, 1303
Flushing, Dutch port, Admiral de Ruyter monument, 5539
Flutter wheel, in hydraulics, 6351
Fly, story of the family, 6086
 its millions of offspring, 5709
 use of coloured flies in fishing, 184
 can a fly hear? 1048
 can a fly see all ways at once? 5001
 how does a fly walk on the ceiling? 3279
 is a fly stronger than a man, comparing their size? 817
 where do flies go in the winter? 930
 why is the fly found in the amber? with picture, 3646
 different varieties, 6082, 6087; in colour, 5714
 eye of, under microscope, 1910, 3662
 See also under specific names, as House-fly, Ichneumon fly
Fly-bug, preys upon insect pests, 6452
Flycatcher, characteristics, 3140
 route of migration, 223
 varieties, 3147; in colour, 2897, 2898, 3144, 3264
Flycatcher, White-collared, 3147
Fly honeysuckle, fruit, in colour, 3668
Flying, pioneers of Flight, 21
 how can a bird fly though it is heavier than air? 6854
 how fast do birds fly? 6852
 what makes a kite fly? 5244
 why cannot we fly in the air as we swim in the water? 5251
 why cannot we fly like the birds? 6597
 Langley Flying Medal, 19
 See also Aeroplane, Airship, and Balloon
Flying-boat, voyage in described, 430
 pictures, 431, 433, 438, 4633, 4688
 sectional drawing of gas-turbine engine, 4694
 See also Aeroplane
Flying dragon, in Jurassic Age, 1507
Flying fish, lengthened fins, 4858
 do flying fish really fly? 3166
Flying fox, characteristics of, 292
 extermination of necessary, 294
 several resting in tree, 295
Flying lemur: see Cobego
Flying lizard, twenty species, 4495
Flying opossum, characteristics of, 2390
Flying squirrel, characteristics, 1034
 red, 1031
Fly orchid, what it is like, 5267
 picture, 5265
Fly-stitch, how to make, with picture, 2488
Fly-wheel, in steam engine, 3212
 throwing-wheel, 301
 can a fly-wheel explode? 3394
Foch, Marshal Ferdinand, 1708, 4049
Fog, differs from mist, 2866
 where does fog go when it clears? 314
 why does a fog deaden sound? 2173
Fold, how did the farmer enlarge the fold, puzzle, 2730, 2858
Foligno, Niccolo da: see Da Foligno
Folk song, what is a folk song? 4385
 In the Days of the Folk Song, painting by T. C. Gotch, 4385
Follen, Eliza Lee: see Poetry Index
- Follicle**, in botany, 6495
Fontaine, Pierre François Leonard, French architect, work on the Louvre, 8370
Fontainebleau, French town, artists who founded new school, 2790
 chateau built by Francis I, 6860
 chapel interior, 6356
 Cour des Adieux, 6363
 palace stairway, 6362
 view of the chateau, 6357
Foochow, Chinese port, 6502
Food, kinds we need and their uses, 2181
 adulteration of food, 4410
 air or oxygen as food, 2182
 bread next best food to milk, 2427
 breakfast-table plants, 2311
 British Empire and Commonwealth production, 6004
 cereals very important, 1697
 children's food of vital importance, 2184
 conference of nations at Hot Springs, 6484
 dehydrated, 2663
 eat slowly, 1932
 food taxes explained, 4660
 fungi as food, 3411
 how the blood absorbs the useful part of the food, 2064
 iron in all the best foods, 943
 meat and bread compared, 1571
 meat as food, 2557
 milk is perfect food, 2307
 rationing and subsidies help maintain supplies, 5516
 salts and their importance, 1540, 2183
 seeds used as food, 2431
 sugar's importance, 2183
 supply on board ship, 3573
 time-table for digestion of various foods, 7068
 vegetable food's low cost, 2427
 United Nations and world food problems, 6484
 United State's production, 3681
 we live by the food we absorb and not by the food we eat, 2064
 can any animal live for years without food? 3279
 does the brain need food? 442
 is it ever harmful to cook food? 2172
 what are dehydrated foods? 2663
 why can animals do without it? 6600
 why do we cook our food? 189
 why is a food tin generally round? 6233
 will the world's food supply ever run short? 6230
 alimentary canal, diagram, 2061
 food plants of the world, map, 221
 passage in human body, 1317
 value of various kinds, 2181
Food and Agriculture Organisation, Uno, 6485
Fool's parsley, what it is like, 4543
 picture of flower, 4540
Fool who would Please Everybody, picture by Byam Shaw, 157
Foot, bones of human foot, with diagram, 1695
Foot, Roman measure explained, 3284
Football, game, with pictures, 4949
 manufacture of ball, 4264
 Young Football Player, sculpture, 5133
Footpath, walk on the left, 6837
Foot pound, definition: see units of measurement, 7071
Footprint, prehistoric animal's, 2007
Forage, story of forage plants, 2185
Foraging ant, 5967
Foraminifera, mountains formed by tiny creatures, 6956
 their size, 1636
 under microscope, 1915, 6955
Forbes, Maude Stanhope, her painting, Hop-o'-My-Thumb, 5089
Forbes, Stanhope, landscape painter of Newlyn school, 2546
 painting of a fishing boat, 3780
Ford, Edward Onslow, English sculptor
 An Egyptian Singer, sculpture, 4653
Ford, Henry, American pioneer of modern motor traction, 5949
 portrait, 5939
Ford, W. Onslow, his painting, Joan of Arc, 2260

- Fordwich**, Kent, old ducking-stool, 4864
view of River Stour, 1592
Foreign Legion, what is it? 5862
Foreign money, names and pre-war value of coins, 7069
Forest, story of the forests, 2369
 picture story, 5349
 death-rate of trees, 3543
 importance to India, 5350
 remains of great ancient forests, 1260
 temperature needed for growth, 1071
 their uses, 2370, 3542
 United States' extensive resources, 3675
 varieties, 1071
 how did the great coal forests come to be buried? 4764
forest scenes, 2370, 2372, 2374
 prehistoric jungle from which coal came, 2839
Forester, Cecil Scott, English novelist, 3714
Forest fly, wings bitten off after settling on animal victims, 6088
Forest hog, size and tusks, 1658
Forfeits, and how to play them, 380
Forge of Vulcan, painting by Velasquez, 1307
Forgetfulness, why do we forget things? 4022
Forget-Me-Not, its legend, 6813
 of Borage family, 4289, 4416, 4543
 once called scorpion grass, 5592
 flower, in colour, 4418
 mountain forget-me-not, in colour, 5641
Fork: see Table fork
Forkbeard, greater, in colour, 5100
Forked ginannia, seaweed, 3413
Forked spleenwort, fern, in colour, 1800
Fork-tailed storm petrel, in colour, 2766
Formaldehyde, formed by Sun, 460
Formic acid, in ants' bodies, 61
Formosa, or Taiwan, Chinese Island, 6500, 6510, 6617
 annexed by Japan, 6620
 map, in colour, 7096
Forsaken Merman, picture to poem, 351
Forsyte Saga, series of novels by Galsworthy, 3714
Fortescue, John William, English historian, 3828
Fortescue - Brickdale, Eleanor, her painting, Botticelli's studio, 6675
 painting, Leonardo showing model flying-machine to patron, 6187
Fort Garry: see Winnipeg
Forth Bridge, Scotland, 548, 2756
 stages in building, 546-50
Fortuna, classical goddess, 3520
 what was Fortuna's wheel? 6842
16th-century statue, 75
Fortune, can people tell our fortunes? 6105
Fortuny, Mariano, Spanish painter, 3400
Fort William, Canada, grain elevator at quayside, 2191
Forum, Rome, fragment from Trajan column, 1781
 ruined temple, 1780
 view from above, 1778
Fosbery, E., his painting, Supper, 3653
Fossils, Cuvier and their study, 5573
 Hugh Miller on fossil beds, 2001
 their origin, 644, 645
 who first found fossils in the Earth? 3650
 See also Earth; and names of Geological Ages
Foster, Stephen Collins, American composer, 1268
 See also Poetry Index
Foucault's pendulum, how to make, with picture, 6299
Fouquet, Jean: see Fouquet, Jean
Foundling Hospital, The, helped by Handel, 144
 Hogarth's interest in it, 2050, 5692
Foundry, pouring molten metal into moulding boxes, 3761
Fountain, worshipped in ancient Greece, 3530
 how to make a fairy fountain, with picture, 1741
 why does it play? 6354
Fountain pen, its story, 2033
 manufacture, 2035-37
Fountains Abbey, ruins near Ripon, Yorkshire, 5745
 views, 719, 964
Fouquet or Foucquet, Jean, French painter, 1051, 1058
 his portrait of Juvenal des Ursins, 3657
Four-banded chipmunk, 1031
Four Feathers, novel by A. E. W. Mason, 3713
Four Friends, fable, 6933
Four-horned cottus, fish, in colour, 5099
Four-horned sheep, 1282
Four-horned sphinx, of U.S.A., caterpillar, in colour, 6210
Four Horsemen of the Apocalypse, novel by Vicente Ibáñez, 5059
Four-spot bowl beetle, in colour, 6336
Four-spot crabro, in colour, 5714
Four-spot mimic beetle, in colour, 6336
Four-spot paratasia, in colour, 6336a
Four-spotted silpha, in colour, 6335
Four-stroke engine, how it works, 4319
Fourteen-spot podontia, in colour, 6336a
Four Wise Ministers, story, 4114
Fowl and the Jewel, fable, 3992
Fowler, Sir John, English engineer, 548, 2756
Fowls, their origin, 799
 pictures of many varieties, 4249, 4253
Fox, Charles James, English statesman, 2136
 M.P. for Westminster, 1585
Fox, George, English itinerant preacher, 5451
 preaching in tavern, 5453
Fox, species and characteristics, 542
 pictures of different species, 536, 541
Fox and his Skin, fable, 3624
Fox and hounds, game, 2611
Fox and the Cock, fable with picture, 3991
Fox and the Crow, fable, 374a
Fox and the Faithful Horse, story, 2268
Fox and the Goat, fable, 3990
Fox and the Hen, fable, 6933
Fox and the Lion, fable, 3990
Fox and the Mask, fable, 3992
Fox and the Wolf, fable with picture, 3745
Foxes and bases, game, 3476
Foxglove, plant, 4781, 6493
 fertilised by humble bee, in colour, 2046
 field of wild foxgloves, 831
 flower, 4779, 6382
Foxhound, picture, 668
Fox Repaid in his Own Coin, one of Chaucer's Canterbury Tales, 5802
Fox-shark, or thresher, British species, 5228, 5231
 in colour, 5100
Fox-terrier, smooth-haired, 668
 wire-haired, 666
Fox Without a Tail, story, 4848
Foynes, Eire, airport on Shannon, 3068
Fracto-cumulus, clouds, 2869
Fracto-stratus, clouds, 2872
Fragonard, Jean Honoré French painter, 1689
 Paintings by Fragonard
 boy as a pierrot, 1687
 Cupids at play, 1680
 portrait of young lady, 3656
 The Farmer's Family, 3172
 The Souvenir, 3534
Fram, Nansen's Arctic exploration ship, 6430
Frame, how to frame a picture, with illustration, 3844
Framlingham, Suffolk, castle, 1952
Frampton, Sir George, sculptor, 4768
 his Peter Pan statue in Kensington Gardens, 2663
 his sculpture, Mysteriarch, 4900
France, Anatole, French novelist and poet, 4458, 4516
France, republic of Western Europe, history before the Revolution, 3917
 history after the Revolution, 4043
 France as it is Today, 4163
 Alsace-Lorraine, returned, 1824, 4050
 architecture: see French architecture
 art: see French art
 Attila's invasion, 2156
 Canadian possessions given up, 1330
 canal mileage, 4868
 Channel Tunnel possibility, 4163
 Christianity established, 3917
 Church's tyranny, 4258
 colonial possessions, 4049
 dams in, 4173
 electric power, 4172
 England and France in eighteenth century, 4501
 English kings drop title of King of France, 4984
 English possessions lost by King John, 835, 1082
 flag's colours, 5247
 Franks give her their name, 707
 Franks invade, 2278, 3917
 French Union formed, 4050
 Germany united with her under the two Pepins, 2521
 German reparation payments used for rebuilding, 4050
 Huguenots emigrate to South Africa, 3182
 Hundred Years War, 056, 3920
 indemnity paid to Germany (after 1871) 4049
 Joan of Arc's mission, 2261
 law of the Code Napoléon, 6726
 literature: see French literature
 loss of possessions in India, 1228, 2946
 Maginot Line defences, 1941
 peasants' grievances before the Revolution, 647, 4255, 4371
 people and dialects, 4174
 population, 2042
 railways, effect of Second World War, 4171
 religious wars, 3922
 republic declared, 4048, 4372, 4623
 Revolution: see French Revolution
 Roman influence on language and customs, 3917
 Second World War, 1945, 4050
 seigneur or landowner's privileges, 647
 sugar from West Indies prohibited, 2312
 water power and dams, 4172
 water transport, 4169
 wheat-growing difficulties, 1576
 how did the French flag get its colours? 5736
 what is Marianne to the French? 5863
 what is the Foreign Legion? 5862
 Pictures of France
 air force insignia, in colour, 6980
 flags, in colour, 6973
 historical scenes, 3919-21
 peasant types, 4162
 picture atlas, 4175-80
 railway engine, 3511
 scenes in a pleasant land, 4051-56
 valley of the Meuse, 2498
 maps, 3926-31, 5248
 map, in colour, 7084
 See also names of towns, colonies, provinces, and so on
Francesca, Piero della: see Della Francesca
Francis I, king of France, 6359
 building of Louvre, 3392, 6380
 persecution of Protestants, 3920
 Raphael invited to France, 6191
 surrendering to Charles V, 3919
Francis II, king of France, 3922
Francis II, Holy Roman emperor, 4296
Francis of Assisi, St., Italian friar who founded the Franciscans, 3270, 6809, 6922
 church at Assisi, 5993
 influence on Sieneese art, 566
 Pictures of St. Francis
 his death, painting by Giotto, 572
 painting by Bartoli Taddeo, 572
 with St. John and Madonna, 565
 with the birds, 6917
Francis Xavier, St.: see Xavier.
Franco, General, Spanish dictator, 5277
Francolin, distribution of species, 4250
 double-spurred, 4251
Franco-Prussian war, outbreak, 4298
 effect on French wheat crop, 1576
 France's indemnity 4049, 4299
Frankfort, German cathedral city, 4428
Franklin, Benjamin, American statesman and writer, 4331
 electrical work, 735, 5326
 steamship suggested, 3734
 experiment with pane of glass, 735
 flying kite in thunderstorm, 5322
 portrait of, 4331
 sculpture by Jean Houdon, 4646

- Franklin, Sir John**, English Arctic explorer and hero, 4605
Governor of Tasmania, 2576
 served under Flinders, 2382
 Arctic expedition, 4603, 4607
 snuffers from expedition, 4860
Franks, early German people, 2521
 France invaded by, 707, 2278, 3917
 Switzerland subdued, 4668
 See also Pepin, king of Franks, and Charlemagne
- Franz, Sir James George**, British writer, 3830
 portrait, 3827
Franz Josef Land, Benjamin Leigh Smith's visit, 6435
 Nansen meets Jackson in, 6439
 Weyprecht and Payer's discovery, 6434
 Nansen outside Jackson's hut, 6443
Franz Joseph the Second, prince of Liechtenstein, 6857
- Fraser, Claude Loyal**, painter, 2678
 scene from Beggar's Opera, 2667
Fraser Canyon, 2199
- Frazer's eagle owl**, 3501
- Freckles**, what are they? 2172
- Frederick the Great**, king of Prussia, Carlyle's history of his reign, 3216
 Prussia's prosperity developed, 4296
Frederick, prince of the Palatinate married daughter of James I, 4294
Frederick William, Great Elector of Brandenburg, 4294
- Fredericksborg Lake**, castle, 5164
- Free, Hiram**, story of, 6952
- Freedman, Barnett**, British artist, his painting, June 1944: the Landing in Normandy, 1947
- Freedom**, spread in Europe and Far East, 4621
 duty of personal freedom, 2352
 God's purpose a spiritual freedom, 2226
 great desire for it by Europeans, 4297
 growth in 19th century, 1581
 law not its enemy, 4901
 man not free, 4207
 Milton's fight for freedom, 5350
 soul of Renaissance, 3880
Freedom of a City, what it is, 5982
- Freeman, Edward**, English historian, 3095; portrait, 3093
- Freetown**, capital of Sierra Leone, 3318
 views, 3320
- Freezing**: see Frost
- Frémiet, Emmanuel**, French animal sculptor, 4647
 his sculpture, Pan and little bears, 4650
 statue, Joan of Arc, 2253
- French**, the inhabitants of France, 2521
 See also France
- FRENCH**
 School lessons in French
- A Visit to France, 136
 Arrival at the Railway Station, 264
 On the Platform, 392
 A Ride in the Train, 515
 Names of Familiar Things in Dining-Room, 516
 In Sight of the Sea, 640
 Hurrying to the Boat, 764
 The Party on the Boat, 884
 On the Way to Paris, 1007
 At the Hotel, 1131
 The First Day in Paris, 1256
 A Tea-Party in Paris, 1389
 The Party Goes Shopping, 1504
 Buying Presents for Home, 1632
 The Lost Key, 1752
 A Day at Versailles, 1878
 We Go to a Party, 2000
 A Visit to the Louvre, 2124
 The Noise in the Chimney, 2244
 The New Governess, 2368
 A Doll and a Quarrel, 2492
 A Visit to Fairyland, 2616
 The Man who Disappeared, 2740
 The Little Visitor, 2864
 The Old Apple Woman, 2988
 The Lost Pony, 3013
 A Day on the Ice, 3138
- Stories in French**
 Comment fut découvert le voleur, 4733
 Comment Gotham acquit une mauvaise Réputation, 3251
 Comment le Roitelet devint Roi, 5342
- Comment Maitre Lapin fit Fortune**, 6322
 Comment un Sultan trouva un honnête Homme, 4968
- Damon** et Pythias, 6814
Jupiter et l'Âne, 4117
 La Chance de Jacques le Simple, 5466
 La Chatte et le Perroquet, 3746
 La Femme Solitaire du Maroc, 4362
 La Grenouille Orgueilleuse, 3867
 La Gruie et le Crabe Prudent, 6466
 La Jeune Fée du Lac Van, 3496
 L'Amour rit aux Inventeurs de Clefs, 4244
 L'Avocat et les Poires, 3867
 Le Balayeur et la Banque D'Angleterre, 5828
 Le Cerf se mirant dans l'eau, 3993
 Le Cheval et l'Âne, 4117
 Le Chevalier et la Pierre Merveilleuse, 5342
 Le Chien et l'Âne, 3993
 Le Choucas vaniteux, 3993
 Le Fermier et la Cigogne, 3993
 Le Juif Errant, 4612
 Le Loup et la Cigogne, 3867
 Le Loup et le Chevreau, 4117
 Le Loup dans la Nuit, 6081
 L'Empereur et les Figues, 5708
 Le Renard et le Chèvre Fidèle, 6569
 Le Renard et le Lion, 4117
 Le Roi qui arriva à Cachemire, 5582
 Les Enfants dans la Forêt, 3623
 Les Oies qui gardaient Rome, 4853
 L'Homme qui se rappela, 5953
 L'Orgueilleux Roi de Kamera, 4486
 Prête à mourir pour son amie, 6682
 Vieillard-Chrysanthème, 6195
- Songs and Rhymes in French**
 Au Clair de la Lune (with music), 4441
 Au Temps Jadis, 734
 Fais Dodo, Colas, 7011
 Il était une Bergère (with music), 4443
 Je suis un petit poupon (with music), 4441
 La Bonne Aventure (with music), 4441
 La Boulangère (with music), 4443
 La Mère Michel, 7041
 La plus aimable à mon gré, 7041
 Le bon temps que c'était, 734
 Pan! Qu'est-ce qu'est la? (with music), 4442
 Polichinelle (with music), 4442
 Ramène tes Moutons, 7041
 Sur le Pont d'Avignon, 7041
- French architecture**, cathedrals south of the Loire, 5987
 châteaux and town halls, 6357
 Gothic movement, 5985
 Renaissance and its masterpieces, 6359
 Romanesque cathedrals, 5744
 pictures: see Gothic, Romanesque, Renaissance, and modern Architecture, and names of towns and buildings.
- French art**, the story of French painting and sculpture is told in the following chapters
 Rise of French art, 1681
 French art after the Revolution, 1803
 Nature artists of France, 2789
 French art out of doors, 2923
 Modern movement in French art, 3041
 Gallery of French Paintings, 3169
 Sculptors of France, 4643
 Academy of Arts founded, 1683
 Avignon school, 1058
 Barbizon school, 2790, 3287
 Impressionist and post-Impressionist movements, 2928, 3041
 modern painters, 2923, 3041
 Nature artists, 2789
 Pointillism, 3042
 Romantic school, 1806
 school of Watteau and Fragonard, 1689
 sculpture, 4644
 stained-glass windows, 6731
 weaving of tapestries, 6738
 pictures: see illustrations to chapters above, and under titles of pictures and names of artists
- French Congo, Africa**, 4049
- French Equatorial Africa**, French colony, 7499
 maps, in colour, 7098-99
- French Guinea**, African colony, 6749
 native woman with baby, 6748
- French knots**, how to make, with picture, 2610
- French language**, use in England in Norman times, 717
- French leave**, what is it? 5368
- French literature**, its history, 4453
 Revolution's effect, 4456
 Russian literature influenced, 4816
- French poodle**, 665
- French Revolution**, all about it, 647
 British attitude, 1332
 effect on French art, 1803
 influence on Europe, 1332
 Napoleon's part, 1334, 1441, 4371
 outbreak, 3924, 4043
 spirit of the people, 4258
- French Revolution Pictures**
 aristocrats in prison, 652
 Charlotte Corday going to execution, 649
 famous people, portraits, 647
 Louis XVI and family in prison, 653
 Madame Roland going to execution, 649
 Marie Antoinette walking to execution, 653
 men joining the colours, 4045
 mob breaks into National Convention, 4047
 Revolutionists on the march, 4047
 Robespierre facing his captors, 651
 Rouget de Lisle singing Marseillaise, 651, 4049
 victims on way to guillotine, 4043
 women marching to Versailles, 4045
- French seams**, how to do them, and picture, 2735
- French Union**, association of France and overseas territories, 4050
- French West Africa**, description, 6749
 map, in colour, 7098
- French willow**: see Rose-bay
- Frescoes**, in ancient Greece, 322
 in early Christian art, 444
- Fresnel, Augustine Jean**, his theory about light, 5690
- Frey, wife of Woden**: see Frigg
- Friar's balsam**, what it is, 2938
- Fribourg**, Switzerland, 4670
- Frick, Julius W.**, his sculpture, The Echo, 5260
- Friction**, electricity created by, 233, 234
 why does a pin get hot when rubbed? 309
- Friction gear**, in mechanics, 6350
- Friday**, origin of name, 594, 2775, 5224
 picture, 5223
- Fridolin**, Irish missionary, 4310
- Friedland**, battle of, victory of Napoleon, 1456
- Friend of the Withered Tree**, story, 532
- Friendship**, should we like one friend more than another? 4758
- Friese-Greene, William**, inventor of moving-picture camera, 6704
- Frigate-bird**, habits, 3750, 3749
- Frigg**, wife of Woden, or Odin, Friday named after her, 594, 2775, 5224
 picture, 5223
- Fright**, what makes our teeth chatter when we are frightened? 4996
 why do our faces turn white with fright? 6109
- Friiled begonia**, 6382
- Friiled lizard**, characteristics, 4495
 picture, 4493
- Friiled shark**, 5233
- Fringed-gilled shark**, Japanese, 5228
- Fringed porphyra**, seaweed, 3415
- Frisch's anomala**, beetle, in colour, 6336
- Friskians**, early German tribe, 6526
 legend of code of laws given them, 534
- Frith, William Powell**, his painting, Bourgeois Gentilhomme, 6072
 his painting of a railway station, 2556
- Frithiof**, story, 2143
- Fritillary**, butterfly, all the British species, with egg, caterpillar, and chrysalis, in colour, 6203-08
- Fritillary**, or snake's head, plant, 6497
- Frobisher, Sir Martin**, English navigator, 4600
 Arctic islands mistaken for Asia, 6432
 Labrador explored, 4600, 5206
 narwhal tusk brought to Queen Elizabeth, 2150
 visited the Orkneys, 1014
 portrait, 4597

Frodi, King, story, 5091
Froebel, Frederick, German education-ist, 4961; portrait, 4955
Frog, species, 4742
 egg laying and hatching, 2516, 4744
 limbs, 452, 1566
 tadpole's development, 452, 4740
 can a frog live inside a stone? 1795
 does it ever rain frogs? 4764
 where are a frog's ears? 4994
 will frogs turn into animals? 60
 common and edible frogs, in colour, facing 4469
 different species, 4739, 4741, 4743
 X-ray photograph, 2588
Frog (puzzle), how did the frogs jump on the tumblers? with picture, 1496
 1624
 how to make a jumping frog from a wish-bone, 1744
Frogbit, method of multiplying, 1068
 stages in development, 1067
Frog-hopper, froth-making insect, 5721
 leg under microscope, 1912
 picture, 5719
Frogmouth, habits, 3266, 3255
Frogs who Wanted a King, fable, 3743
Froissart, Jean, French medieval chronicler, 954, 4453
 on Black Prince, 3506
 on the English, 3640
Froment, Nicholas, of Avignon, early French painter, 1058
Fromentin, Eugène, French artist and writer, 1808
 his painting, Hunting with falcons, 1903
Frost, Robert, American poet, 4205
Frost, effect on Earth's surface, 642
 hoar frost, 2566
 how does frost help the farmer? 2300
 hoar frost on plant and window, 4502
Frosted sea-orache, what it is like, 5762
Frost-fish, name of scabbard-fish, 5233
Froth-fly, odd plant species, 5721
Froude, James Anthony, English historian, 3095
Fruit, life-story, 831, 945
 Ancient Egyptian cultivation, 425
 Australia's crops, 2446
 British Empire and Commonwealth crops, 2074, 3186
 citrus fruits, 1813
 grease-banding of trees, 6200
 how to mark your name on fruit, 2734
 Italy's produce, 4910
 salts that make it good as food, 2183
 South Africa's crops, 3186
 table fruit in Britain derived from wild varieties, 1820
 what it is, 336
 British wild fruits, series in colour, 3665
 different forms, 6495
 foreign fruits, in colour, 2688
 See also Seed and names of Fruits
Frustum, how to find area of surface and cubic contents; see quickest way of finding things, 7076
Fry, Elizabeth Gurney, English philanthropist and prison reformer, 1582, 3979
 visiting prisoners at Newgate, 3779, 3981
Fry, Dr. Joseph, cocoa firm founder, 4108
 portrait, 4102
Fuchsia, developed from South American plant, 6260, 6378, 6384
Fujiyama, dormant volcano and loftiest peak of Japan, 2245, 6622
 pictures, 2247, 6617
Fuller, George, American painter, 3287
 his painting, Winifred Dysart, 3294
Fuller's teasel, use of flower-heads, 2942, 5022, 2941
Fulmar petrel, 3999; in colour, 3021
Fulton, Robert, American inventor, 3214, 3734
 offering steamships to Napoleon, 3737
 picture of first steamship, 3735
 portrait, 3733
Fumitory, common kind, 4416, 6491
 flower, in colour, 4419
Fünen, second largest of the islands of Denmark, 5148
Fungus, the Fungus family, 3410
 absence of chlorophyll, 2542, 3411
 characteristics, 702

fairy rings, 2542, 3410
 flies often killed by them, 930
 kinds which attack wheat, 1578
 their uses, 1440
 different arrangement of gills, 6495
 philobolus, spores scattered by explosion, 946
 trichia, spores exposed to wind, 947
Funny bone, what it is, 1810, 2797
Fur, trade in Canada, 2322
Furcifer, meaning of, 2909
Furies, mythological ministers of vengeance, 3532
 picture of Sir E. Burne-Jones, 3513
Furness Abbey, Lancashire, 962
Furniture, great makers of, 3855
 fine styles developed by Chippendale, Sheraton, and Hepplewhite, 6737
 for doll's house, with pictures, 5073
 why does furniture make a noise at night? 1046
 wicker garden furniture, how to clean, 258
 styles, 6733-35
Furse, Charles Wellington, English portrait painter, 2545
 his painting, Diana of the Uplands, 3655
Fur-seal, its story, 903
 picture of group, 905
Furze, or gorse, 945, 5019, 6492
 flower, in colour, 5141
 spikes of furze, 205
Fusan, Korean port, 6624
Fuse-box, protects electric circuits, 612
Fuselage, aeroplane's body, 4578
Fust, John, merchant who financed Gutenberg, 1514
 claiming Gutenberg's printing stock, 1512
 portrait, 1517
Futtehporé Sikri, famous buildings, 5628
Fyen Island, Denmark: see Fünen

G

Gabain, Ethel, British artist, her painting, Evacuees, 1941
Gabelhorn, Alpine glaciers, 2246
Gabun, colony of French Equatorial Africa, 6750
Cadarnes, country of, 3466
Caddi, Taddeo, Florentine painter and architect, 573
 planned church of Or San Michele at Florence, 5993
Gadfly, great gadfly, in colour, 5714
Gadshill Place, Dicken's early love for it, 2012
Gadwall, bird, in colour, 3024
Gaillardia, flower, 6384
Gaini cattle, characteristics, 1155
Gainsborough, Thomas, one of the greatest English portrait painters, 2052, 5696
 landscape paintings that are as great as his portraits, 2306
 comforted by Reynolds, 5699
 drawing first portrait, 5697

Pictures by Gainsborough

Baillie Family, in colour, 2179
 Blue Boy, in colour, 2180
 his own portrait, 5691
 Lady Georgiana Spencer, 2058
 Marsham Family, 2059
 Miss Haverfield, 72
 Miss Linley and her brother, 72
 Mr. Poyntz, 2054
 Mrs. Graham, 3656
 Painter's Daughters, in colour, 2180
 Rustic children, 2305
Gainsborough, Lincolnshire, Wesley's first meeting-house, 5446
Galago, lemur of African mainland, 166
 picture, 164
Galahad, Sir, story, 6943
 painting by Allan Stewart, 6948
 painting by G. F. Watts, 6948
Galapagos Islands, group of Pacific islands, sea lizard and land iguana, 4495
 picture of land iguana, 4493
Galatea: see Pygmalion and Galatea
Galatz, Rumanian Danube grain port, 5770
Galaxia, Milky Way in mythology, 3518
Galxia, Roman emperor, 1667, 2878
Galdhöppigen, peak in Norway, 5156
Galdos, Benito, Spanish writer, 6059

Gale, Norman: see Poetry Index
Galen, Claudius, Greek physician, 2504
Galena, sulphide of lead, 1302
Galicia, Poland, 4546, 4548
Galicia, old north-west province of Spain, 5056, 5278
Galilee, Sea of, lake in northern Palestine, 3459
Galileo, Italian mathematician and astronomer, 1885, 3760, 5445
 discovery of Saturn's rings, 3355
 discovery of sunspots, 3111
 first practical telescope made, 1885, 3009
 imprisoned by inquisition for saying the Earth moved, 1678, 3612
 light's speed first measured, 4993
 microscope improved by him, 1883
 professor at Padua, 3610
 looking through first telescope, 3615
 on trial before Inquisition, 3609
 portrait, 3611
 watching swinging lamp at Pisa, 3615
Gall, ink made chiefly of it, 1294, 2034
 picture, 6495
Galla oxen, characteristics, 1155
Galle, Professor, discovery of planet Neptune, 3358
Callego, a wind, 5405
Calley Hill man, head, 3047
Gall-fly, causes oak-apples, 4763
Gallipoli, Turkish port, tragedy of British attack (1915), 1709
Galloway cattle, characteristics, 1154
Gall-wasp, tree species, 5842
 picture, 5834
Galsworthy, John, English novelist and writer of plays, 3713, 3711
Galt, John, Scottish novelist, story of Scottish people, 3582
Galton, Sir Francis, founder of science of eugenics, 4130
 hearing of animals tested with high-pitched whistle, 6181
Galvani, Luigi, Italian scientist, 481, 5328, 5323
Galvanometer, electric currents measured by, 2714
 Lord Kelvin's, 5949
 mirror type, 978
Gamaliel, taught St. Paul, 5880
Gambia, British West African colony, 3318
 flag, in colour, 6968
 map, in colour, 7098
Gamboge tree, description, 2691
 plant, in colour, 2687
Gamelyn the Terrible, story and picture, 3739
Games, air football, 508
 amusing word game, 4710
 anagram making, 3970
 Aunt Sally, 3476
 badminton, with pictures, 5685
 ball-game for the small garden, 2859
 baste the bear, 3476
 blindfold games, 1746
 blindman's buff, 4468
 blind man's stab, 1746
 blind partners, 1746
 bounce about, 3476
 bowls, 4590
 bridge-board, 2118
 buff with a wand, 1746
 bung the bucket, 3476
 bursting the balloon, 508
 buttercups and bees, 3108
 buz, 1372
 capping verses, 255
 catch-ball, 3596
 catch the salmon, 3476
 chess, 1119
 clumps, 2118
 colour competition, 128
 competition medley, 255
 conkers, 3476
 cricket, 3967
 croquet, 4832
 cross ball, 3596
 cudgel, 3108
 darts, 5440
 deer stalking, 2608
 Dicky show a light, 3103
 dining out, 5686
 dominoes, 1868
 doublets, 4710

draughts, 6542
drawing a pig, 1746
driving a blindfold team, 3350
egg cap, 3596
fan race, 508
filling the gap, 3724
fives, 5564
flags, 3724
flower-pot race, 3107
football, 4949
forfeits and how to pay them, 380
fox and hounds, 2611
foxes and bases, 3476
games to play on the beach, 2729
game with the atlas, 1120
garden fives, 3596
general post, 2118
gold rush, 1000
golf, 3843
guard the block, 6423
hide and seek in the open country, 3474
hide and seek on the hearthrug, 1372
hockey, 4709
hold fast! let go! 4468
house paper-chase, 2118
how, when, and where? 1372
hunt the ring, 4468
hunt the slipper, 4468
I love my love, 1372
initials, 255
I spy, 3724
jingling, 1746
jolly miller, 3476
lacrosse, 4218
lawn tennis, 3103
leap-frog, 6671
likes and dislikes, 381
making palindromes, 870
making up the donkey, 3472
marbles, 5562
musical chairs with a difference, 504
nature study game, 6544
netball, 5931
nine-holes, 3596
noughts and crosses, 255
observation game, 2118
obstacle race, 3108
old maid, 5687
outdoor games, 3108, 3724
outlines, 255
passing the plate, 508
pick-a-back ping-pong, 1622
pictured proverbs, 3848
post-ball, 2859
posture, 3596
proverbs, 3848
puss in the corner, 4468
putting on the donkey's tail, 1746
quoits, 3844
rackets, with pictures, 5315
relay race, 508
rhymes, 1372
rounders, 6928
round tag, 3724
Russian gossip, 1372
shadow theatre, 869
Simon says, 1372
snap, 5687
snip-snap-snorun, 5687
Spade the gardener, 5687
spelling bee, 1372
spoons, 1746
spotting the stranger, 2116
squash, with pictures, 5315
squeak piggy, 1746
squeiggles, 6302
stick and ring, 3108
stickerchief, 1863
table tennis, with picture, 5069
team race, 3596
telegrams, 2118
think of a number, 874
tit tat toe, 4468
touch, 3724
trap ball, 3596
trying to get to the door, 6302
up to London, 255
warning, 3724
what anima's are these? 5934, 6058
what-are-these-things? 6058, 6177
what-is-it? 2116, 2236
where-is-it? 1626, 1743
who-are-these-people? 4216, 4342
why-is-it? 2232, 3350
wolf, 4468
word games with skittles, 875

zoo-guess, 755
Gamopetalae, or **Sympetalae**, sub-class of plants, 6491
Gandhi, Mahatma, leader of India Independence movement, 2948
Gandon, James, architect of the Four Courts, Dublin, 6471
Ganges, Indian river, 2810, 2496
Hardinge Bridge, 555
state barges, 2499
Gannet, food, home, and habits, 3750
alighting on nest, 3748
pictures, 3022, 3749
Gansfleisch, Gutenberg's father, 1512
Ganymede, cupbearer of gods, 3517
Gapelet anemone, in colour, 1554
Garborg, Arne, novelist, 4940
Garbica, message conveyed to him during Spanish-American war, 6949
Garden, flowers, 6257
building a rock garden, with pictures, 5311
how did the father divide his garden? puzzle and pictures, 2859, 2982
how to make a herb garden on a window-sill, 1496
how to make a submarine garden and pictures, 2982
making a garden pool, with pictures, 5683
pictures of flowers, 6257-59, 6377-84
Garden city, what is a garden city? 4892
Garden fives, game, 3596
Garden furniture, how to clean wicker, 256
Garden of Gethsemane, picture, 3470
Garden of the Hesperides, what was it? 5244
Garden saw-fly, in colour, 5714
Garden snail, picture, 6577
Garden spider, wonderful web, 5595
picture, 5593
spider's web, 5597
Garden warbler, bird, in colour, 2766
in nest, 3139
Gardiner, Allen, English missionary, 1139, 1141
Gardiner, Bishop, portrait, 1053
Gardiner, Samuel Rawson, English historian, 3095, 3093
Gareth, Sir, story, 6942, 6944
Garfish, in colour, 5100
Garganey, bird, in colour, 3024
Gargantua, Rabelais's hero, 4454, 5490
Garhaddin Ashurnasirpal II, palace of, discovered by Layard, 6870
Garibaldi, Giuseppe, Italian soldier and patriot, 896, 4785, 4787, 4795
looks out from his island home, 892
meets Victor Emmanuel II, 4787
portrait, 889
statue in Rome, 897
Garlic, broad-leaved, 4780
Garnet, mineral, 1301
Garonne, French river, 4169
view at Bordeaux, 4179
Garrick, David, English actor and writer of songs, 1264; portrait, 1261
Garrison, William Lloyd, American anti-slavery leader, 3245, 4203, 3239
calling on Wilberforce, 3238
See also Poetry Index
Garstang, Professor John, discoveries at Jericho, 6983
Garstin, Norman, painter, 2546
Garter snake, American species, 4619
Gartok, town of Tibet, 6312
Gary, Blasco de, Spanish inventor, 3733
Gas, what gases are and what they can do, 3331
atomic numbers of gases, 4954
become liquid when cooled, 140
Boyle's law, 5201
gases of the blood, 1062
Faraday and their liquefaction, 5332
how a gasmeter works, pictures described, 4127-28
illuminating gas from meteoric stone, 3608
inert gases, 4345
in heavenly bodies, 12, 3850
in nebulae, 3974
known as fluid by science, 5197
law of loss of volume at low temperatures, 5319

nature of gases, 4100
rare gases, 4347
if the gases in water make fire, why does water quench it? 4130
why do we sometimes say gas and sometimes vapour? 5736
for Coal gas see Gas, coal, below :
See also Acetylene, Oxygen, Water gas, and so on
Gas, coal, its manufacture, 3334, 3447
first use for lighting a house, 2748, 3332
why is the centre of a gas-flame blue and the outside yellow? 6466
its manufacture, picture series, 3447-53
working of pneumatic gas switch, 1047
Gas-engine, invention led to motor-car, 4319
See also Gas-turbine and Internal Combustion engine
Gas-holder, when nearly full, 3447
how it works, part sectioned, 3453
Gaskell, Mrs., English novelist, 3584, 3579
Gas Light and Coke Company, Beckton, gas manufacture, picture series, 3447-50
Gas meter, how it works, pictures described, 4127-28
Gaspar, journey to Bethlehem, 3590
Gaston de Foix, statue, 4900
Gastropods, single-shelled molluscs, 6583
Gas-turbine aeroplane, airliner, 4689
sectional drawing of engine, 4694
Gas-turbine engine, speed, 6346
sectional drawing of aeroplane engine, 4694
Gatekeeper butterfly, egg, caterpillar, and chrysalis, in colour, 6208
Gattamelata, Donatello's magnificent equestrian monument, 4523, 4531
Gaudier-Brzeska, Henri, French sculptor, 4896
Gauge, railway, 3948
Gauguin, Paul, French painter, 3046
Gaul, conquered by Caesar, 3917
Caesar receiving surrender of defeated chieftain, 2875
Gauls, route into Greece, 5156
Gaur, Indian cattle, 1155, 1158
Gauss, definition: see units of measurement, 7071
Gautama, became the Buddha, 5077
See also Buddha
Gautier, Théophile, French novelist, 4457
story of cat and parrot, 779, 3746
Gav'rimis, Island of, blocks set up by Bronze Age men, 315
Gawain, Sir, fights Green Knight, 2885
killed in rebellion, 6944
story of his marriage, 6815
Gawsworth, Cheshire, Tudor Hall, 1088
Gay, John, portrait by Kneller, 1927
See also Poetry Index
Gayal, animal of India, 1155, 1158
Gay callithamnion, seaweed, 3415
Gay-Lussac, Joseph Louis, French chemist, 5319, 6312, 6309
Gaza, ancient city of Palestine, 6269
excavated by Sir W. F. Petrie, 6983
Samson's feat of strength, 1488
picture, 3470
Gazelle, species and habits, 1400
Cuvier's gazelle, 1401
Gazette, origin of name as applied to newspapers, 5487
Gdansk (Danzig), Poland, 5032
scenes, 5035
See also Danzig
Gdynia, port of Poland, scenes, 5034, 5038
Gean, or Wild cherry: see Cherry
Gear, in mechanics, 6350-52
Gear-box, how it works, 4324
assembled in motor factory, 3762
on motor-car, how it works, diagram, 4321
position on motor cycle, 4326
Gear train, in mechanics, 6350
Gebel Auriá, dam and reservoir on Nile, 6373
Gecko, distribution and characteristics of 300 species, 4495
pictures, 4492-93
Gedding, Suffolk, moated Hall, 1087

Geese that Kept Guard over Rome, story, 4737
Gehazi, servant of Elisha, 2728
Geiger-Muller, speed-recording instrument, 6344
Geiranger Fjord, Norway, views, 5158
Geirrod, his story, 2266
Gellée, Claude: see Lorrain, Claude
Gem pimplet anemone, picture, in colour, 1554, 1555
General Assembly, Uo, 6478, 6482
General post, game, 2118
General strike (1926), 1827
Generating station, electric, 611
Hoover Dam, 5605
Queenston-Chippawa, Ontario, 5604-05
Generator, at gasworks, 3451
 one of the largest in world, 5610
Generic name, what it is, 6490
Genesis, Book of, mention of flood, 6870
Genet, Citizen, emissary to United States, 3794
Genet, pictures of animal, 416
Geneva, historic Swiss city, League of Nations' home, 4674, 4748
 Red Cross founded at, 4674
 Reformation in, 4677, 6725
 trade agreements at, 6484
 why is it the international city? 6725
League of Nations headquarters, 4747
Rousseau Island, 4665
Geneva, Lake of, 4668, 4676, 2497
Geneviève, St., patron saint of Paris, paintings by Puvis de Chavannes, 2925, 2926
Genghis Khan, Mongolian conqueror, 6390, 6503, 6510
Génissiat, France, giant dam, 4173
Genius, a talk about, 1235
 Carlyle's definition, 2602
 spirit worshipped in ancient Greece and Rome, 3520
Gennesaret, Plain of, picture, 3467
Genoa, port of Italy, 1016, 4913, 6110
Columbus's statue, 4923
 church of St. Mary, 4922
 scene, 4920
Gentian, plant, 4416, 5268, 5890
 common autumn, in colour, 5395
 field, in colour, 4420
 marsh, in colour, 6128
Gentu penguin, bird with King Penguin, 4001
Geodric, Prince Vladzis, how his father found him, 6814
Geoffroy, J., On the Steps of the Church, painting, 3654
Geological Period, Era or Age, explanation of, 10, 646
 Cambrian Age, 885
 Carboniferous Age, 1257
 Cretaceous Age, 1633
 Eocene Age, 1753
 Jurassic Age, 1505
 Mesozoic or Secondary Age, 1381
 Miocene Age, 1766
 Oligocene Age, 1756
 Permian Age, 1260
 Pleistocene Age, 1877
 Pliocene Age, 1877
 Silurian Age, 886, 1009
 Triassic Age, 1381
 Glacial Ages, how can we explain? 2520
 Pictures of its plants, animals and their fossil remains, together with maps of the British strata, are to be found with each Age
 map of the four Eras, in colour, 766-7
Geology, study of, 765, 2001, 5574
 rock details, series, 2003-7
 See also Fossil; Geological Period; and names of Ages
Geometry, Euclid's books, 986
 invented by Hero of Alexandria, 2745
George, St., patron saint of England, 781
 how flag originated, 6961
 in Faerie Queene, 5919
 who he is, 2785

Pictures of St. George

drawing by Dürer, 1194
 painting by Mantegna, 940
 picture by Dürer, 1187
 quest of St. George, painting by Frank Salisbury, 2785
 sculpture by Donatello, 4529

with the dragon, 778
 with the Holy Family, by Giovanni Bellini, 938
George I, king of England, could not speak English, 1327, 4535
George II, king of England, lack of interest in British affairs, 1327
George III, king of England, American colonies lost, 1330, 3793, 4126
George IV, king of England, 2060
George V, king of England, 1707, 1830
 last appearance, in Westminster Hall, 1827
 memorial in London, 1828
 portraits, 1823
George VI, king of England, 1830
 speech at opening of Parliament, 4536
 coronation, 1829
 portrait, 1823
George II, king of Greece, 5768
George of Podebrad, king of Bohemia, 4552
George Cross, awarded to Malta, 1942, 3420
George, David Lloyd: see Lloyd George
George, Stephan, German poet, 4700
Georgetown, capital of British Guiana, 3558
George Washington Bridge, U.S.A., 554
Georgia, American cotton state, foundation by Oglethorpe family, 3792
 cotton pickers at work, 173
 flag, in colour, 6970
Georgia, republic of the U.S.S.R., 5896, 6014
 maps, 5904, 5908
Geranium, introduced from South Africa, 6258
 meadow members of family, 4416, 5890
Gerard, Sir Montague, adventure with wild boar, 1654
Gerbil, rodent, 1035
Gerhard, German antiquary who discovered many Etruscan relics, 6994
Gericault, Jean, French painter, 1806
Gerlache, Adrien de: see De Gerlache
Germ: see Microbe
German architecture, 5991
 Renaissance style, 6371
 Romanesque cathedrals, 5746
 pictures: see illustrations to above references, and under names of German towns
German art, development, 1185
 bronze workers of 16th century, 6740
 lack of spirituality, 1185
 painters of 19th century, 3398
 sculpture, 4643
 pictures, 1186-7, 1189-92, 3399
 See also names of artists
German blatella, insect, in colour, 5713
Germander, seed hurried away, 946
 wood germander, flower, in colour, 4908
Germander speedwell, 4284
 flower, in colour, 4285
German East Africa: see Tanganyika Territory
German Empire: see Germany
German hornet-fly, in colour, 5714
Germania, ship, Arctic voyage, 6433
Germanicus, Roman general (15 B.C.-19 A.D.), portraits, 1667, 2878
German literature, its story, 4695
Germany, republic of Central Europe, 4421
 history of Germany, 4291
 African possessions surrendered, 3188
 architecture and art: see German architecture and art
 Attila crosses the Rhine, 2151
 Caesar's description of Germans, 1538
 canals, effect on trade, 4867
 character of people, 4424
 Christianity's spread, 1907, 4292
 coal production, 2836
 First World War, 4300, 4624
 language and literature: see German language and German literature
 mythology of race, 4695
 Napoleonic wars, 4296
 once united with France, 2521
 population, 2041, 4422
 railways, 3950
 Saar Valley returned to Germany, 4425
 salt deposits, 1540
 Second World War, 1941, 4304

Pictures of Germany

Autobahn (motor-road), 4421
 Barmen-Elberfeld railway, 4427
 collieries and foundries of Bochum, 4425
 flags, in colour, 6973
 scenes, 2498, 4305, 4423, 4429-36
 School of Arts and Crafts at Dessau, 6616

Maps of Germany

animal life of the country, 4308
 general and politica., 4312
 in colour, 7087
 physical features, 4306
 showing historical events, 4310
 See also names of States and towns
Germ plasm, what it means, 4129
Gernrode Abbey, Germany, Romanesque architecture, 5746
Gerona, city of Catalonia, Spain, 5994
Gertrude, Queen, in Shakespeare's play Hamlet, 6163
Gesta Romanorum, popular medieval collection of stories in Latin, 156
Geta, Roman emperor, 2881, 2879
Gethsemane, Garden of, 4586, 3470
Gettysburg, Pennsylvania, U.S.A., Abraham Lincoln's speech after famous battle, 1639
Geyser, in Yellowstone National Park, 3808
Gezira, cotton-growing plain in Anglo-Egyptian Sudan, 3316
Charial, Indian crocodile, 4494, 4488
Chazi I, king of Iraq and son of King Feisal, 6266
Ghent, ancient Flemish capital, at junction of Lys and Schelde, 5526
 Hubert van Eyck's wonderful altarpiece, 1052
 St. Bavo's cathedral, 5652
 town hall, 6371
 Quai aux Herbes, 5659
 towers, 5653
Cherkin, what it is, 2434
Chetto, what is a chetto? 6857
Chibellines (1140 to 1450), political party in Italy which maintained the supremacy of the German kings, 4581
Ghiberti, Lorenzo, one of the first great Florentine sculptors, 4522, 4716
 portrait, 4715
Ghirlandaio Domenico, Florentine painter, 6184
 his decorative art, 574
 The Virgin with the Infant Christ, 569
 The Visitation, 567
Chizeh: see Gizeh
Ghose, Mannohan, Indian poet, 4206
Ghurka, warlike race of N. India providing Indian regiments, 2947
Giant, causes of growth, 3176
Giant bell-flower, what it is like, 4781
 flower, in colour, 4907
Giant dock, flower, 6009
Giant dragon-fly, in colour, 5713
Giant of the Peak, legend, 1524
Giant petrel, bird, 3999
Giant plaitain-eater, bird, 3377
Giant polyanthus, plant, 6382
Giant pompilus, wasp, 5843
Giant puff-ball, fungus, 3411
Giant's Causeway, mass of basalt columns on the north coast of Co. Antrim, Ireland, 518, 2002, 3061
 basalt columns, 2007
 general view, 3071
 wishing chair, 2005
Giant sloth, characteristics, 2272
Giant snail, with egg, 6577
Giant spider crab, picture, 5477
Giant squirrel, of Malabar, 1033
Giant stone-fly, insect, in colour, 5713
Giant tailed-wasp, in colour, 5714, 5839
Giant tree-toad, amphibian, 4741
Giant who Carried the Poor, story, 6810
Giant with Three Golden Hairs, story, with picture, 2509
Gibbon, Edward, English historian, 3094, 3263
 sitting in church, 3093
Gibbon, monkey, 165, 164
Gibbons, Grinling, English wood-carver and sculptor, 3859, 4767, 6732
 discovered at work by Evelyn, 1351
 portrait, 3855

woodwork in St. Paul's cathedral, 6733
Gibbs, James, architect, 6470
 London churches, 4228
Gibraltar, smallest British Crown Colony, 3417
 arms, in colour, 4985
 flag, in colour, 6966
 scenes, 3417, 3430
 Spanish troops marching out, 2078
Gibson, James, English architect, designer of the Middlesex Guildhall in London, 4230
Gibson, John, Psyche and Zephyrs, sculpture, 5135
Gibson, Wilfrid Wilson, English poet, 4082
Giddiness, why am I giddy when looking down from a height? 3406, 5246
Gide, André, French novelist, 4458
Gideon, Israelite judge, 1366
 choosing three hundred warriors, 1362
Giffard, Henri, balloon maker, 4446
Gifts, how to make in felt, with pictures, 6175
Gigantosaur, thigh-bone's length, 1508
Gilbert, Sir Alfred, English sculptor famous for his Icarus and his Piccadilly fountain, 4767
 Comedy and Tragedy, sculpture, 4653
 Cupid, sculpture, 4656
Gilbert, Sir Humphrey, English navigator, 1020, 5206
 takes possession of Newfoundland, 2075, 5213
Gilbert, Sir John, English artist; his paintings, 5213
 Falstaff Reviews his Followers, 1105
 Shylock and the Merchants, 1101
Gilbert, William, English physician and scientist, 609, 5323, 6309
 electrical experiments, 234, 3610
 experiment before Queen Elizabeth, 5331
Gilbert Islands, group of British Micronesian islands, 3423
 resident's flag, in colour, 6967
Gilboa, Mount, victory of Philistines at, 1861
Gilder, Richard Watson: see Poetry Index
Gilead, Mount, picture, 3468
Giert the Faithful Dog, story, 2888
Gillilan, Robert: see Poetry Index
Gill, Arthur Eric, English sculptor, 4768, 4895
 sculpture on Broadcasting House, 4765
Gill, fish's lungs, 184, 326
 semi-circular canals and larynx developed from, 3407
Gillaroo trout, in colour, facing 5197
Gilman, Charlotte Perkins: see Poetry Index
Ginannia, forked seaweed, 3413
Ginevra, illustration to poem, 3075
Ginger, where it grows, 2808
 plant, in colour, 2686
Ginning machine, separates seed from cotton, 173
Ginsborg, Russian sculptor, 4896
Giocondo, Giovanni, Venetian architect, 272, 6112
Giorgione, Venetian painter, 280, 934
 teacher of Titian, 6678
 his portrait, 271
 portrait of a General, 279
Giotteschi, followers of Giotto, 573
Giotto, Florentine painter, sculptor, and architect, 4716
 campanile of Florence cathedral, 5993
 frescoes, 568, 573
 Death of St. Francis, 572
 Flight into Egypt, 570
 Giotto discovered by Cimabue, 4719
 introduced by Dante to friend, 4719
 statue, 4715
 talking to Cimabue, 4717
 See also Giotteschi
Giotto's Tower, Florence, 4716
 Donatello helps to build it, 4720
 Luca della Robbia helps with decoration, 4729
 pictures, 4724-6
Giovanni Pisano, Italian sculptor, 4522
Gipsywort, common, what it is like, 6011
 flower, picture, 6009

Giraffe, born with horns, 2516
 characteristics and habits, 1401
 neck has seven vertebrae, 294
 tallest animal, 1403
Giralda Tower, Seville, picture, 5625
Girardon, François, French sculptor, 4645
Giraudon, Edouard, sculpture of goddess Roma, 1536
Girdled drone-fly, picture, 6082
Girdled tenthredo, insect, in colour, 5714
Girgenti, city of Sicily, site of ancient city of Agrigentum, 6720
 Greek temple of Concord, 5508
Girl I left behind me, tune used by Army and Navy on leaving stations or garrison towns, 1264
Girl in the Rice Field, story and picture, 2757
Girls and boys come out to play, nursery rhyme and music, 353
Girl who Defied an Emperor, story, 6311
Girl who Held the Fort, story, 6336
Girl who kept dry in the Rain, story, 2384
Girl who saw the Tsar, story, 5708
Girl who walked to London, story, 5334
Giromella, Charles, Boy and Snail, sculpture, 5132
Grondins, French Republican party, 652
Girtin, Thomas, English painter, 2420
 Kirkstall Abbey, painting, 2423
Girton College, Cambridge, 6805
 picture, 6474
Gisborne, Thomas: see Poetry Index
Gisze, George, portrait by Holbein, 1190
Gizeh, Temple of the Sphinx, 6860
 painted walls of tomb, in colour, 319
 pyramid and sphinx, 5384
 pyramids, 5387
 See also Pyramids, Sphinx

Gjellerup, Karl, Danish writer, 4939
Glacial Age, or Ice Age, 168, 2250
 Pleistocene Age described, 1877, 1880
 relation to art, 191
 British Isles in, 5248
 will the Ice Age come again? 4997
 glacier marks on rocks in Scotland, 2001, glaciers formerly in British Isles, 726-27
 Hochstetter ice-falls, New Zealand, 2246
 stones with scratches made by ice, 2004
Glacier, how one is made, 2250
 effect on Earth's surface, 2002
 in Ice Age, 1877, 1880
 Jostedalstra, Norway, 5158
 Tasman Glacier in New Zealand, 2695

Pictures of Glaciers

Bosson Glacier, Mont Blanc, 2132
 in Rocky Mountains, 2202
 in Spitzbergen, 2249
Mer de Glace, Chamonix, 4054
 on the Gabelhorn, 2246
Tasman Glacier, New Zealand, 2249, 2703
 See also Glacial Age
Glacier-flea, cold-loving insect, 5722
Gladbach, German industrial town, 4426
Gladston: see Fetid iris
Gladiator, Roman contests, 1538
 statues, 1784, 4395
Gladiolus, flower, picture, 6384
Gladstone, William Ewart, English statesman, attempt to solve Irish question, 1586
 leader of Liberals, 2137
 South African policy, 3186
 portrait, 2133
 portrait, with parents, 4134
 speaking in Parliament, 1587
Glaisher, Dr. James, English meteorologist, 20, 21
Glamis Castle, architecture, 6235, 6249
Gland, far-reaching effects, 3173
 ductless glands, 3174, 3176
 fluids made by the glands, 1432
 saliva carried by tubes, 1064
 work done by stomach glands, 2062
 pictures of glands, 3173
 pictures of glands in botany, 6495
 See also under specific names
Glanvill, Ranulf, fine imposed on, 3270
Glanville fritillary, egg, caterpillar, and chrysalis, in colour, 6208

Glasgow, largest Scottish city and port, 216
 art school, 6611
 cathedral, 5871, 6731

Pictures of Glasgow

arms, in colour, 4990
 George Square, 1336
 School of Art, 6607
 University arms, in colour, 4989
Glass, story of manufacture, with pictures, 3331
 glasswort used in making, 5762
 hot glass can be moulded or cut, 2418
 making stained glass, 6731
 music from drinking glasses, with picture, 1495
 silicon in glass, 16
 weight of a cubic foot, 7074

Wonder Questions

is glass always brittle? 2418
 why can we see through it? 5736
 why does hot water crack thick glass more easily than thin? 5364
 why does it not break if put in cold water and boiled? 6234
 why is it hard to write on glass? 6599

Pictures of Glass

magnifying, how it enlarges, 3283
 picture-story, 3881-88
 stained glass in Perugia church, 6734
 weaving with glass threads, 3884
Glass stopper, how to remove, 1625
Glasswort, of Spinach family, 2436
 flower, picture, 5759
Glastonbury, Somersetshire town, ancient lake village discovered, 6997
 abbey, picture, 963
Glaucous gull, size of bird, 3996
Glaucous pimpled anemone, in colour, 1553
Glaucus, sea-god, 3529
Glazing, in china and earthenware, 302
 use in leather manufacture, 3160
Gleaners, The, Millet's famous picture in Louvre, 2792
Glehn, W. G. de: see De Glehn
Glencol, Argyllshire, 1338
Glendalough, Ireland, seven churches at, 3062
Glenniflass, in Trossachs, 1338
Gleyre, Charles, his painting, Ruth and Boaz, 1620
Gilding, engineless flight, 4580
 how to make a model glider, 4830
 pioneer experiments, 22
Globe-fish, formidable armour, 5234
 lesser spotted globe-fish, 5231
Globe-flower, what it is like, 5519
 in colour, 5642
Globehorn anemone, in colour, 1555
Globe Theatre, London, Shakespeare part owner, 4476
 Shakespeare at a play, 4475
Glomerule, in botany, 6495
Glooskap, baby story, 780
Gloriana, in Faerie Queene, 5919
Glory Woods, near Dorking, 1590
Gloster Meteor, jet plane, 4689
Gloicester, Duke of, his standard, in colour, 6365
Gloicester, capital of Gloucestershire, cathedral, 4766, 5874, 1712, 3639, 5878, 5882, 7122; arms, in colour, 4990
Gloucestershire, English county place in, 7159; road map, 7122
Gloves, how to mend, 2984
Glow-worm, purpose of radiance, 6333
 why does a glow-worm glow? 686
Gluck, Christophe, portrait, 145
Gluckstein, Montague, a creator of industry, 4110
Glue, why does it hold wood together? 3234
Glume of grass, opening, 581
Gluten, in wheat, 1574
Glutton, or volverine, 793, 789
Glycon, of Athens, Greek sculptor, 4404
 his Farnese Hercules, 4401
Clyptodon, ancestor of armadillo, 2274
Gmelin's nitophyllum, seaweed, 3413
Gnat: see Mosquito
Gneiss, rocks, 765, 768
Gneizno, town of Poland, cathedral, 5036

Gnorimus, noble, beetle, in colour, 6336
Gnu, characteristics and species, 1400
 white-tailed species, 1399
Goat, family, 1285
 carriers of Undulant Fever, 2627
 goat made from a pear, with picture, 2235
 keeping a goat as a pet, with picture, 1866
 milk good and free from tuberculosis, 1286, 2307
 all kinds of goats, 1279-82
 herd on grassy slope, 1277
Goat and the Lion, fable, with picture, 4115
Goat and the Vine, fable, 3866
Goat moth, habits, 6201
 caterpillar, in colour, facing 5935
Goatsbeard, member of genus *Tragopogon*, 6493
 flowers close in the dark, 586
 why called Jack-go-to-bed-at-noon, 5266
 flower, in colour, 5396
Goat's rue, 6380
Goat willow, what it is like, 3787
 use of bark, 3788
Gobelin, Jean, French tapestry maker, 3858
 famous tapestry factory, 6738
 sheep-shearing design, 6736
Gobi, vast desert in Chinese Turkestan and Mongolia, 2126, 2375, 6510
Goby, eggs, 6102
 moist tail necessary to life, 4857
God, man's first idea of God, 543
 Aristotle's belief, 1287
 duty to God comes first, 2353
 Ezekiel's teaching, 913
 God is Truth, 493
 how to think of God, 1983
 images forbidden to Israelites, 544
 Israelites worship, 543
 Jewish idea widens, 1665
 Kingdom of the Universe, 862
 Kingsley on creation of world, 2225
 man's inner thoughts known, 1668
 Mohammed's belief in One God, 2280
 presence in everyday universe, 3099
Godetia, flower picture, 6384
Godrevy Lighthouse, Cornwall, view, 347
Gods, Greek and Roman gods, 3513
 Ancient Egyptian gods, 426
 Thales and ancient religions, 672
 Assyrian sculptures, 3898
 Egyptian sculptures, 3895, 3896
Godsaver, Sir Thomas, portrait by Holbein, 1190
God Save the King, who wrote it? 6849
God Save the People, Ebenezer Elliott's poem, 1584
Codshill, Isle of Wight, 1593
Codthaab, town of Greenland, 5168
Godwin, Earl of the West Saxons, 707, 5587
Codwin-Austen, Mount, peak in the Himalayas, height, 5620
Godwin the Peasant Boy, story and picture, 5587
Codwit, black-tailed bird, 3876, 3875
Goes, Van der: see Van der Goes
Goethe, Johann Wolfgang von, Germany's greatest poet, 4697
 discovery about flowers, 81, 332
Faust, 4698
 ideas on Greek literature, 5180
 portrait, 4695
Gog and Magog, legendary British heroes, 4244
Gogh, Van: see Van Gogh
Gogol, Nicholas, Russian novelist, 4817
 portrait, 4815
Goidel, ancient race in Ireland, 3064, 3063
Gol, Norway, timber church, 5158
Gold, ancient use in decoration, 5857
 art of the old goldsmiths, 6740
 as money, 5390
 atomic structure, 4222
 Australia's production, 2570
 British Empire and Commonwealth output, 6004, 2074
 conductivity: see Heat conductors, 7073
 England's gold in Norman times, 3383
 making of fountain-pen nibs, 2033
 melting and boiling points, 4998

melting point: see melting points of metal, 7073
 principal gold-mining countries, 2324, 2448, 2573, 3318, 5858
 reserves held by the nations, 5858
 specific gravity, 4954
 Southern Rhodesia's production, 3312
 Tanganyika's production, 3315
 wealth of nations not in gold, 5883
 weight of a cubic foot, 7074
 world production, 5857
 native or metallic gold, 1302
 digging for gold by mechanical excavator, 3032

Wonder Questions

is there gold in the sea? 5614
 what becomes of all the gold? 5857
 why does it not tarnish? 4894
 why is it not found in England? 5371
 See also Gold-mining

Goldbeater's skin, use in airship, 4446
 what is it? 6106
Gold carp, fish, in colour, facing 5197
Gold Coast, British West Africa, 3183, 3318
 resources, 6005

Achimota college, 3320
 Accra, 3322
 Christiansborg Castle, 3323
 flag, in colour, 6963
 treaty-making in 17th century, 2081
 map, in colour, 7098
Goldcrest: see Golden-crested wren
Golden Age, in the legends of Ancient Rome, 3514

Golden Ass, what was it? 3394
Golden conure, bird, in colour, 3144
Golden-crested bird of paradise, 2772
Golden-crested wren, smallest British bird, 3025 3139
 in colour, 2900

Golden cuckoo, 3377
Golden eagle, 6830, 6836
 speed of flight, 6852
 in colour, 2897

Golden-eye duck, 3753
Golden Fleece, what was the search for the Golden Fleece? 3040

Golden Gate Bridge, San Francisco, 551
Golden Hind, Drake's ship, 4598, 5212
Golden Horde, invasion of Russia, 5893
Golden Horn, inlet of the Bosphorus forming the harbour of Istanbul, picture, 6143

Golden-limbed cereal beetle, in colour, 6335

Golden mole, blind animal, 294, 296
Golden number, what it is, 6975

Golden oriole, in colour, 3021
Golden osmylus, in colour, 5713
Golden pheasant, in colour, 3263

Golden plover, in colour, 2766
Golden-rod, of genus *Solidago*, 6493
 picture, 6378

Golden samphire, 5759, 6493
 flower, in colour, 5643

Golden saxifrage, pollinated by snails, 832
 what it is like, 5892; picture, 5891

Golden Shuttle, engine, in colour, 1042
Golden tree-frog, amphibian, 4743

Goldfinch, bird preserved by Act of Parliament, 2091
 legend of how it got its plumage, 6683

in colour, 2899
 nest and eggs, 2903
 picture of a pair, 2892

Goldfish, food and habits, 4978
Gold-fronted green bulbul, in colour, 3261

Goldilocks, of Buttercup family, 4782
 flowers, in colour, 4905, 5641

Gold leaf, manufacture, 6106
Gold mining, in Australia, 2570
 in New Zealand, 5857

Waihi, New Zealand, 2705
Goldoni, Carlo, Venetian writer of plays, 4583

Gold Rush, game, 1000
Goldsinny, fish, in colour, 5099
Goldsmith, Oliver, Irish poet, novelist, and writer of plays, 1979

lunching in town, 1978
 playing his flute, 1979
 scene from *Vicar of Wakefield*, 2349

walking with Doctor Johnson, 1977

See also Poetry Index

Goldsmiths' Company, figure-head of state barge, 4864

Gold-spangled anemone, in colour, 1553

Golf, how to play, 3843

Coliath, killed by David, 1860

defying armies of Israel, 1987

speaking to David, 1987

Coliath beetle, African insect, 6329

Colliwog, how to make from bits and pieces, with pictures, 5195

Concourt, Edmund de, French novelist and playwright, 4458

Concourt, Jules de, French novelist and playwright, 4458

Gondola, of airship, picture, 4450

Goneril, in Shakespeare's play *King Lear*, 6169

Gonneville, Binot de, explorer, 2377

Gonometer robusta, of Rhodesia, caterpillar, in colour, 6210

Gonville and Caius College, Cambridge, arms, in colour, 4988

Gonzalo, in Shakespeare's play *The Tempest*, 6296

Goodall, Frederick, his pictures

Cranmer taken to the Tower, 1083

Packing Wool in Egypt, 798

Rebekah at the Well, 623

Good Companions, novel by J. B. Priestley, 3714

Good-King-Henry, plant, 5023

flower, in colour, 5141

Good King Wenceslas, picture to poem, 3934

Goodman, the boy who saved the hamlet, 5581

Goodness, what it means, 619

Good Samaritans of the Desert, story, 5957

Goodwick Hill, Pembrokeshire, 1462

Goodwin, Albert, *The Wreck of Armada*, painting, 1075

Goodwin Sands, shoals about six miles from the east coast of Kent, 1050

Goodyear, Charles, vulcanisation of rubber discovered, 1166

Goosander, bird, 3752
 in colour, 2897

Goose, family, 3747

characteristics and habits, 3751, 3754

speed of flight, 6852

different varieties, 3752, 3753

in colour, 2766, 3261, 3262

route of migration, 223

Gooseberry, 1820, 1817

fruit, in colour, 3666

Gooseberry saw-fly, picture, 5839

Goosefoot, members of family, 2436, 2442, 5782

Goose grass, member of *Bedstraw* family, 2683

flower, in colour, 4288

Goose that was only a Goose, fable, 3624

Goosey, **Goosey**, **Gander**, nursery rhyme, picture, 229

Gopher, uses mouth to carry material dug up, 1036

Goral, link between goats, antelopes, and serows, 1286

picture of animal, 1280

Gorboduc, first English tragedy, 857

Gordian, three Roman emperors, portraits, 2879

Gordian, senator of Rome, father of Pope Gregory I, 2278

Gordian Knot, what was the Gordian knot? 6101

Gordon, Adam Lindsay, Australian poet, 4206, 4201

Gordon, Charles George, English general and administrator, 3004, 6504

Gordon, Charles William: see Connor, Ralph

Gordon, George: see Byron, Lord

Gordon-Cumming, family, arms, 928

Gorgas, William Crawford, American army surgeon, 4868

Gorgon, mythological monster, 3530, 5736

head cut off by Perseus, 4987

Gorilla, characteristics, 159

known to the ancients, 2997

pictures, 161, 163

Gorki, Russia, formerly Nijni Novgorod, city and harbour, 6028

- Gorky, Maxim, Russian novelist, 4820
 portrait, 4815
 Gornicki, Polish writer, 5027
 Corse: see Furze
 Goshawk, characteristics, 3631
 picture, 3627
 Goshen, Land of, Jacob settled in, 994
 Gospels, The, Book of Kells, 450
 in British Museum, 450
 stories from, 4211
 Gosse, Sir Edmund, English poet and
 literary critic, 3831
 See also Poetry Index
 Gota Canal, Sweden, locks, 4878
 Gotch, T. C., painting, Golden Youth,
 4385
 Goteborg, seaport of Sweden, 5152
 Gotham, story of wise fools, 662
 Gothic architecture, new architecture
 that arose in Middle Ages, 5889, 5985
 Belgian, Dutch, German, and Italian
 styles, 5991, 5992
 churches built in 12th and 13th centuries,
 449
 French châteaux and town halls, 6357
 modern examples in London, 6472
 revival in nineteenth century, 6005
 rayonnant style, 5983
 English specimens, 5865, 5875-82
 European examples, 5987, 5995-6002
 See also Architecture under names
 of countries
 Gothic art, beautiful statuettes in early
 Gothic cathedrals, 4406
 medieval woodcarving, 6732
 stained-glass windows, 6731
 examples, 4405
 Gottfried von Strassburg, German poet,
 4696
 Gottwald, Klement, Communist presi-
 dent of Czechoslovakia, 4554
 Go to Bed First, nursery rhyme, 230
 Goudge, Elizabeth, English novelist,
 3714
 Goujon, Jean, French sculptor, 4644,
 6380
 Nymph of the Seine, sculpture, 4643
 Gould, Gerald: see Poetry Index
 Gould, Hannah Flagg: see Poetry Index
 Gould, John, English naturalist, 5574
 Goulden, R. R., his Margaret Ramsay
 MacDonald monument, 5136
 Gouldian Finch, in colour, 3144
 Gounod, Charles François, French com-
 poser, 150: portrait, 145
 Gourd, loofahs and dried gourds, 189
 members of Gourd family, 2432, 2433
 Gourdan, Bertram de, set free by
 Richard I, 1733
 Government, cost, 4658
 personnel, 4538
 See also Parliament
 Governor, mechanical, adopted by
 Watt, 2748
 in steam-engine, 3212
 in engineering, 6350
 Governors-General of Dominions, flags,
 in colour, 6967-68
 Gow, Andrew Carrick, English painter,
 2544
 War Despatch, painting, 2555
 Gower, George, English painter, 1928
 Goya, Francisco, Spanish painter and
 etcher, 1312
- Pictures by Goya
 Donna Isabella, 3537
 Duchess of Alba, 3778
 Parasol, the, 1309
 Goyen, Van: see Van Goyen
 Gozzoli, Benozzo, Florentine painter, 573
 painting of one of three Wise Men, 572
 St. Augustine Reading Philosophy, 571
 Gracchus, Tiberius, Roman statesman
 and reformer, 4353
 Grace Darling, story, 4849
 Graceful lia beetle, in colour, 6336A
 Graces or Charites, Greek and Roman
 goddesses of beauty, 3517
 Grackle, black-winged bird, 2893
 Graf Zeppelin, German airship, 4452
 pictures, 4447
 Graham, James: see Poetry Index,
 under Montrose, Marquess of
 Graham, Peter, Scottish 19th-century
 painter, 2545
 Moorland Rovers, painting, 3656
- Grahame, Kenneth, British writer, 404
 Graham Land, Antarctic territory, 3558,
 6550
 Graham-Toler family, coat-of-arms, 928
 Grail: see Holy Grail
 Grain, corn, Canada's export, 2324
 Grain, weight: see apothecary's weight,
 troy weight, avoirdupois weight, 7069
 Grain-aphis, insect pest, 5722
 Grain elevator, Fort William, Ontario,
 2191
 Grammar, origin of the science, 3120
 Gramme, unit of mass used by men of
 science, 4834
 Gramophone, electronics in sound am-
 plifying, 2715
 why does a trumpet make it louder? 5127
 study of sound waves, 6429
 how it works, 313
 Grampians, Scottish mountains, hydro-
 electric power scheme, 5609
 Grampus, almost suffocated in mackerel
 shoal, 5101
 Scott's ponies devoured by, 6558
 seal's enemy, 911
 attacking hunters, 2151
 Granada, Nicaragua, landing place on
 Lake Nicaragua, 7014
 Granada, Spanish city, once a Moorish
 capital, 5278, 5622
 architecture of cathedral, 6372
 Carrera de Darro, 5285
 cathedral, 6363
 cathedral, interior, 6365
 Moorish king's palace, porch, 5631
 See also Alhambra
 Grand Canyon, stupendous gorge of
 the Colorado river, in Arizona, U.S.A.
 general view, 2131
 rapids of the Colorado river, 3806
 waters of Colorado river, 3807
 wonderful rocks, 3806
 Grand Coulee, world's biggest dam, 4811
 Grand Trunk Pacific Railway, Canada,
 construction of, 2321
 Grand Union, first flag of the United
 States, 6962
 Grand Union Canal, locks, 4867, 4878
 train of barges on, 4882
 view in Bedfordshire, 1836
 Granite, in Earth's surface, 517
 power needed to crush it, 5853
 weight of a cubic foot, 7074
 Aberdeen quarry, 5853
 Penryn quarry, 5852
 picturesque weathering, 2007
 reef Aberdeen, 2005
 sawing, squaring and shaping, 5854
 Granny's Wonderful Chair, story, 401
 Grant, James Augustus, explored the
 Victoria Nyanza, with Speke, 3006
 portrait, 2997
 Grant, Sir Robert, English statesman
 and writer of hymns, 1758
 Grant, General Ulysses Simpson, Ameri-
 can general and president, monument
 in Chicago, 3689
 monument in Washington, 3688
 tomb in New York, 3688
 Granular cystocaira, seaweed, 3414
 Grape, oldest cultivated fruit, 1818
 yeast plant's effect on it, 1440
 fine bunch of grapes, 1816
 fine vines, 1813, 1821
 gathering grapes in Tirol, 1821
 Grape-fruit, citrus fruit, 1815
 Grape hyacinth, member of genus
 Muscari, 6497
 flower, 6384
 Grape vine aphid, life-story, 4519
 Graphite, in pencil-making, 3648, 2039
 use in atomic energy, 4814
 specimen of mineral, 1302
 Grapsus strigosus, land crab, 5476
 Casmere Lake, views, 461, 2497
 Grass, the Grass family, 3303
 animal life dependent on grass for food,
 1922, 2427, 2430
 how it differs from sedge, 3306, 6012
 use as fodder, 2185
 varieties, 2186, 3303
 can the planting of grass add acres to
 England? 6724
 what is grass made of? 5370
 what is meant by the saying that All
 flesh is grass? 1922
- why does it turn yellow after being
 made into hay? 6226
 why is it green? 5000
- Pictures of Grass
 being cut in English meadow, 2185
 bringing in harvest of hay, 3303
 common scurvy, flower, 5521
 early field scorpion, in colour, 4286
 esparto grass in making baskets and
 mats, 5273
 feathered seeds of feather grass, 946
 goose grass, flower, in colour, 4288
 grasses of the field, 3305-10
 haystack being built up, 2187
 root pierced by blade of grass, 205
 series, in colour, 581-584
 sheep's fescue, 3305
 spiked dock and hard grass, seeds work
 along ground, 946
 See also different species of grass
 Grasshopper, British species, 5718
 pictures, in colour, 5713, 5717
 Grasshopper warbler, in colour, 2898
 Grass-leaved orache, what it is, 5762
 Grass of Parnassus, member of genus
 Parnassia, 5892, 6492
 flower, 5891
 Grass-snake, characteristics, 4496
 Grass tree, description, 3056
 West African, 3059
 Grass vetchling, what it is like, 5268
 flower, in colour, 5396
 Gratiano, character in Shakespeare's
 Merchant of Venice, 6042
 Gratitude, life the great gift for which
 we should be grateful, 3221
 Gravel, example of value of trade, 5261
 weight of a cubic foot, 7074
 Gravelot, Hubert François Bourguignon,
 French painter and engraver, 1690
 Graves, Robert Ranke, British writer
 and poet, 4083
 Graving dock, what it is, 3554
 See also Docks
 Gravitation, great law by which the
 universe is balanced, 4718
 aeroplanes and their problems, 5075
 Einstein opposes Newton's law, 494
 forces in opposition to it, discovered by
 Herbert Spencer, 5076
 Newton discovers its law, 138, 3612
 on surfaces of Sun and planets, 7061
 roots influenced by gravity, 550
 specific gravity explained, 4953
 speed at which falling bodies reach the
 Earth, 4835
- Wonder Questions
 can gravitation pull a cloud down? 4394
 has each planet a law of gravitation?
 929
 how can a bird fly though it is heavier
 than air? 6854
 if the Earth is shrinking shall we ever
 be toppled off? 5128
 what holds a stone up when we throw
 it? 6730
 why do we want to run down hills? 6100
 why does gravitation not pull down
 bodies lighter than air? 3772
 See also Centre of Gravity and
 Specific gravity
 Gravosa, Yugoslav port, harbour of
 Ragusa, 4533
 Gray, Elisha, American telephone
 pioneer, 1842, 1844
 Gray, Stephen, English pioneer of
 electricity, 234, 1801, 5326
 Gray, Thomas, English poet, 2102
 Dr. Johnson's opinion of his Elegy, 1979
 portrait, 2103
 Stoke Poges churchyard, 2103, 6149
 See also Poetry Index
 Grayling, salmon family, 4982
 in colour, facing 5197
 Grayling butterfly, with egg, caterpillar
 and chrysalis, in colour, 6204
 Gray's Elegy: see Gray, Thomas
 Gray's Inn, Inn of Court, barristers
 admitted to practice by, 4777
 tree planted by Bacon at, 3543
 Grayson, David, American writer, 2970
 Graz, Austrian city, 4549
 general view, 4559
 Greasy fritillary: see Marsh fritillary
 Great agrilus, in colour, 6336A

Great American egret, bird, 3868
 Great Atlas: see Atlas Mountains
 Great auk, extermination, 4000
 Great Barrier Reef, coral reef stretching 1200 miles along the north-east coast of Australia, a tale about it, 5830
 Great bat, 290
 Great Bear, or Plough, constellation, mythological story, 3519
 direction of movements, 3725
 maps, 2991-2
 owl nebula in, 3975
 spiral nebula in, 3975
 Great Bear Lake, Canada, radium and uranium deposits, 2193
 Port Radium, 2201
 Great Bed of Ware, 4862
 Great Belt, Danish channel, 5148
 Great Bible, what it was, 6858
 Great-billed raven, bird, 2773
 Great bird of Paradise, in colour, 3142
 Great black-backed gull, 3997
 in colour, 3023
 Great Britain, name first used in reign of Anne, 1214
 Union flag, and how it came to be used in 19th century, 6961
 See also British Isles, British Empire, England, Ireland, Scotland, Wales
 Great broom rape, flower, in colour, 5143
 Great burdock, flower, in colour, 5142
 Great burnet, flower, in colour, 4419
 Great bustard, bird, 3869
 Great caddis-fly, in colour, 5713
 Great Central Railway, engine, in colour, 1044
 Great Chalford, Manor House, 6236
 Great Charter, copy in British Museum, 835, 5527
 the foundation-stone of our liberty, 835, 3270
 Barons take the oath, 835
 King John signing the Charter, 836
 scene at Runnymede, 838
 text, 4863
 Great cherry, flower, in colour, 4285
 Great courlan, bird, 3873
 Great Cressingham, Norfolk, its Priory, 1086
 Great crested grebe, bird, 4003
 in colour, 3024
 Great crested newt, in colour, facing 4469
 Great Dane, mastiff breed, 670
 picture, 66
 Great Eastern, ship that laid Atlantic cable, 158
 Great Eastern Railway, engine, in colour, 1044
 Greater bindweed: see Convolvulus
 Greater burdock, what it is like, 5022
 Greater butterfly orchis, 5022
 flower, in colour, 5141
 Greater celandine, not related to lesser celandine, 4289
 sudden appearance of oak-leaved variety, 1204
 flower, in colour, 4285
 Greater forkbeard, fish, in colour, 5100
 Greater horseshoe bat, 290
 Greater pipefish, in colour, 5100
 Greater plantain, spreading powers, 1065
 Greater skull-cap, what it is like, 6011
 flower, in colour, 6129
 Greater water moss, flowerless plant, 3408
 Greater weever, or sting-bull, fish, 5105
 Great Fire of London, 1212, 1851, 4105
 begins at Pudding Lane (1666), 4227
 Great Cable, mountain in Cumberland, view, 473
 Great gaddfly, insect, in colour, 5714
 Great golden knapweed, flower, 6381
 Great green grasshopper, insect, in colour, 5713
 Great green woodpecker, on tree, 3257
 Great grey shrike, 3015
 Greathed, Henry, English boat builder, 5950: portrait, 5939
 Greathed shield, use in tunnelling, how it works, with pictures, 6216
 pictures, 6219, 6223
 Great hornet-fly, in colour, 5714
 Great horsetail, flowerless plant, 3408
 Great Ice Barrier, Antarctic rampart, 6550

Great kangaroo, 2395
 Great knapweed, what it is like, 5265
 flower, in colour, 5396
 Great Lakes, of North America, 2198
 map, in colour, 7101
 Great Mogul, title of the kings of Delhi, architecture of period, 5823
 dynasty at Delhi, 2944
 receiving British ambassador, 2083
 Great mullein, flower, in colour, 4286
 Great Northern Railway, engine, in colour, 1044
 Great panda, animal of Tibet, 789
 Great Plague, heroism of people of Eyam, 2020
 in London, 4227
 Great Pyramid: see Pyramid
 Great Rebellion, History of the, by Earl of Clarendon, 2133, 3093
 Great reed-mace, what it is like, 6012
 Great Rift Valley, Africa, its lakes, 6742
 prehistoric associations in Kenya, 3315
 what is it? 4640
 map, 4640
 Great rough horsetail, flower plant, 3408
 Great sea stock, what it is like, 5764
 flower, in colour, 5644
 Great Silence, how did the Great Silence begin? 6724
 Great skua, bird, in colour, 2898
 Great snapdragon, preservative against witchcraft, 5268
 flower, in colour, 5393
 Great spotted cuckoo, bird, 3377
 Great spotted woodpecker, bird, in colour, 2768, 3266
 Great sundew, what it is like, 5887
 flower, in colour, 6127
 Great synonyma ladybird, in colour, 6336A
 Great tit, bird, in colour, 2899
 Great Tom of Westminster, bell that saved a sentinel's life, 6832
 Great valerian, flower, 6009
 in colour, 6129
 Great Wall of China, rampart on the northern frontier, 5628, 6503, 6506
 Great War (1914-18): see World War, First, and names of countries involved
 Great water beetle, in colour, 6335
 Great water dock, what it is like, 6011
 Great Western, steamship built by Brunel, 3214, 3738
 setting out on historic voyage, 3737
 Great Western Railway: see Western Region
 Great wild valerian, plant which cats and rats like, 6010
 Great willow herb, what it is like, 6012
 flower, in colour, 6130
 Great Zimbabwe, Southern Rhodesia, ruins of early African civilisation, 3312
 Grebe, characteristics, 4004
 great crested grebe, 4003
 various species, in colour, 3021, 3023-4
 Greece, maritime State of south-eastern Europe, story of, 5765
 agricultural products, 5766
 and Security Council of Uno, 6481
 Italy attacks in Second World War, 1942
 republic proclaimed, 5768
 Turkey forced to recognise her independence, 4622
 Athens, with Acropolis and Temple of Zeus, 5765
 churches in Athens, 5767
 flags, in colour, 6973
 scenes, 5777-79
 types of people, 5769

Maps of Greece

in colour, 7089
 industrial life, 5787
 physical features, 5788
 showing historical events, 5780-81
 Greece, Ancient, great men, 3119
 architecture: see Greek architecture
 art: see Greek art
 battles of Marathon and Salamis, 889, 890, 4027
 civilisation a thing of the soul, 1290
 downfall possibly caused by mosquito-borne diseases, 6460
 drama originated in festivals, 672
 early relations with Rome, 1405

gods, 672, 3513, 3520
 Huns lay waste Greek cities, 2154
 Iliad's story of war with Troy, 5303
 literature: see Greek literature
 remains of Greek city of Naukratis found in Egypt, 6878
 scholars take refuge in Venice, 271
 what is the Acropolis? 6725
 what was the old Greek story of the Flood? 4266
 map, in colour, 7092
 Xenophon's army in sight of sea, 1886
 Greek architecture, story and characteristics, 3769, 5495
 Corinthian order, 5500
 Doric order, 5496
 Egyptian and Assyrian influence on, 5380
 Ionic order, 5497
 Pelasgic architecture gives rise to, 5380
 theatres built on vast scale, 5502
 buildings, comparison with Rome, 5505-12
 columns used, 5497
 House of Cleopatra at Delos, 6991
 Olympia, reconstruction, 5499
 See also Architecture; Athens; and names of buildings
 Greek art, the story of the art that was one of the glories of the world is told in the following chapters
 Aegean Art its Forerunner, 4023
 Golden Years of Greek Art, 4137
 Followers of Golden Age, 4269
 Alexandrian School, 4395
 Aeginetan School of statuary, 4023
 Argive School that produced Polyclitus, 4133, 4140
 Attic School, 4138, 4270
 excavations that have yielded many treasures, 6984
 figures on vases, 324
 frescoes discovered at Pompeii and Herculaneum, 324
 Graeco-Roman period, 4404
 history traced through relics found in Etruscan tombs, 6990
 influence on Early Christian Art, 443
 influence on Paduan School, 931
 pottery and enamel work, 6737
 revival in Italy, 4404
 stones set up to the dead, 4277
 terracotta statuettes, 4025
 vases, 322
 zenith reached in art of Phidias, 4269

Pictures of Greek art

Aldobrandini Marriage, painting, 315
 bronze lamp-stand from Aegion, 6985
 bronze mirror from Sunium, Attica, 6985
 figures on frieze, 671
 head of horse, 5011
 horses from Parthenon frieze, 1037
 in praise of Homer, 1039
 lady with bowl, 673
 sculpture series, 4023-32, 4137-48, 4269-76, 4395-4402
 tomb of Agamemnon at Mycenae, 6993
 vase, 323
 water jug, 71
 Greek Church, foundation, 6916
 strife with Roman Church, 1908
 Greek Cross, emblem of Red Cross, 5620
 Greek Kalends, what they are, 4761
 Greek literature, its genius, 5179
 Goethe on, 5180
 meaning and beauty of poetry, 8128
 much of the Bible originally written in Greek, 6858
 poetry the essential part, 5184
 Roman literature based on, 5425
 Greeks, Ancient, civilisation's debt to them, 322, 671, 3119
 beauty's meaning to them, 1484
 Christianity embraced, 6298
 coins and carvings have been found in India, 2944
 lack of moral character, 1290
 Romans constrained, 1408
 search for truth, 674, 916
 See also Greece; Hellenes
 Green, John Richard, English historian, 3095
 description of Bede's last hours, 6920
 dictating his History, 3095

- Green, Valentine**, English engraver, 2426
mezzotint from painting by Reynolds, 2421
- Greene, Albert Gorton**: see Poetry Index
- Greene, Robert**: see Poetry Index
- Greenfinch**, food and habits, 2901
in colours, 2899
- Green-fly**, or aphid, kept by ants for honey-dew, 5963
garden pest, and picture, 5721
- Green grasshopper**, picture-story, 5717
- Green hairstreak butterfly**, with egg, caterpillar, and chrysalis, in colour, 6204
- Green hangnest**, bird, 2904
- Green Knight**, story and picture, 2885
- Greenland**, huge island of North America, 5149, 6846
Davis rediscovers Greenland, 4601
Iceland compared with, 6975
natives, 5168
Viking discovery, 3027, 5145, 6432
map, in colour, 7100
map of animal life, 5166
map of physical features, industries, and plant life, 5167
- Greenland falcon**, bird, 3636
- Greenland shark**, 5228
- Greenland whale**, 2147
- Greenlet**, bird, home and food, 3025
- Green magpie**, in colour, 3262
- Greenockite sulphide** of cadmium, mineral, 1302
- Green parakeet**, bird, 3499
- Greensands** map of strata in Britain, 1634
- Greenshank**, bird, habits, 3876
in colour, 2898
- Green spleenwort**, fern in colour, 1800
- Green stick fracture**, what it is, 1567
- Green stuff**, see Chlorophyll
- Green-veined white butterfly**, with egg, caterpillar, and chrysalis, in colour, 6204
- Greenwich Hospital**, part designed by Sir John Vanbrugh, 6469
work of Wren and Inigo Jones, 4228, 6241
view, 6239
- Greenwich Observatory**, built for Flamsteed's observations, 3613
Wren builds it, 4227
- Greenwich time**, what is it? 680, 814
monitoring apparatus, 6834
pendulum clock at Greenwich, 6834
reading the stars to fix, 6834
- Green-winged meadow orchis**, member of genus *Orchis*, 6496
fertilised by bees, 4415
flower, 4412
- Greenwood**, Dyer's, flower, 5021
- Green woodpecker**, bird, in colour, 2899
looking out from nest, 5327
- Greeting Cards**, how to make, with pictures, 123
- Gregory I, the Great**, Pope 590-604, 2278, 6919
Alfred translates his *Regula Pastoralis*, 2908
established musical colleges, 2280
- Gregory VII, St.**: see Hildebrand
- Grenada**, southernmost of the Windward Islands, 3555
flag, in colour, 6967
St. George's, general view, 3555
- Grenadines**, group of small West Indian islands, 3555
- Grenville, Sir Richard**, English naval hero, £208
orders Revenge to be sunk, 5213
- Gresham, Sir Thomas**, founder of the Royal Exchange, 4230
- Cresley family**, arms, 4987
- Cretina Green**, what was it? 5371
- Greuze, Jean Baptiste**, French genre and portrait painter, 1690
- Pictures by Greuze
Broken Pitcher, 1685
Fidelity, 1687
girls' heads, 1681
Girl with Doves, 1680
Innocence, 1688
peasant family scene, 1687
Young Rogue, 1686
- Greville, Sir Fulke**: see Poetry Index
- Grévy's zebra**, characteristics, 1899
picture, 1897
- Grew, Nehemiah**, English botanist, 5569
- Grey, Lady Jane**, her sad story, 1081
- Grey of Fallodon**, Viscount, English statesman, 2138; portrait, 2133
- Grey, Sir George**, governor of New Zealand, 2076
- Grey field speedwell**, in colour, 4420
- Grey gnat**, egg raft, 6082
See also Mosquito
- Grey gurnard**, fish, in colour, 5098
- Greyhound**, breed known to ancient Egypt, 669, 667
- Grey lag goose**, bird, in colour, 2766
head of one, 3753
- Grey mullet**, fish, in colour, 5097
- Grey Owl**, Canadian writer and naturalist, 4332
- Grey phalarope**, bird, 3875
- Grey scalywing**, insect, in colour, 5713
- Grey's quagga**, extinct animal, 1897
- Grey squirrel**, American species, acclimated in London, 1030
picture, 1031
- Griboyedov, Alexander**, Russian comedy writer, 4816
- Grid**, economic development under the grid system, 108
- Grief**, sculpture by Bartolini, 5008
- Grieg, Edvard Hagerup**, Norwegian composer, 150; portrait, 145
- Griffin**, what is it? 6346
- Griffon vulture**, bird, 3635
- Grillparzer, Franz**, Austrian poet and playwright, 4699
- Grimm, Jacob**, German writer of fairy tales, collaborator with his brother Wilhelm, 400; portrait, 399
- Grimm, Wilhelm**, 400; portrait, 399
- Grimmshausen, Christoph von**, early German story-writer, 4697
- Grimmia moss**, spore capsules open and closed, 947
- Grimby, Lincolnshire**, Royal Dock, 349
- Grimsthorpe Castle**, Lincolnshire, 6473
- Grindelwald**, winter resort in the Swiss Bernese Oberland, in winter, 4673
- Grinding-mill**, used in brickmaking, 1790
- Grindstone**, ancient British, 724
man sharpening a knife on huge grindstone, 2910
- Grinling Gibbons**: see Gibbons, Grinling
- Grinnell, Henry**, Arctic expeditions equipped by, 6432
- Grip tongs**, 6352
- Gris, Juan**, French cubist painter, 3046
- Griselda**, Chaucer's story of, 5801
- Grison**, carnivorous mammal, 792
- Gristle**: see Cartilage
- Grizzled skipper butterfly**, with egg, caterpillar, and chrysalis, in colour, 6205
- Grizzly bear**, species, 791, 788
- Groat**, value of: see old English coins, 7070
- Gromwell**, common, flower of genus *Lithospermum*, 6493
various kinds in colour, 4661, 4908, 5643
- Grongar Hill**, descriptive poem by John Dyer, published in 1727, 2102
- Groningen**, city in Dutch Friesland, 5531
- Groom, Dr. Robert**, search for missing link, 2539
- Groombridge**, Sussex, moated house, 1592
- Groove-billed barbet**, in colour, 3261
- Grooved cylinder cam**, 6352
- Grooved friction gear**, 6350
- Gropius, Walter**, German architect, 6612
School of Arts and Crafts, Dessau, designed by, 6616
- Gros, Antoine**, French painter, 1806
- Grosbeak**, bird, characteristics, 2901
pictures, in colour, 3264
- Grotfend, Georg Friedrich**, German philologist and archaeologist, 6869
- Grottger, Arthur**, Polish painter, 5028
- Ground ivy**, uses and appearance, 5022
- Groundling**, carp, family, 4979
- Ground nut**: see Peanut
- Ground pine**, what it is like, 5268
flower, 5265
- Groundsel**, member of Composite family 4542, 5265
- Andes** its original home, 948
flower, 4541
mountain variety, in colour, 5143
- Grouse**, species, 4247
in colour, 2765, 2897
- Growth**, pituitary gland controls human growth, 3175
- Wonder Questions
- do we grow as much one year as another? 2919
if men are growing taller, will they ever be twice as big as now? 6466
what makes us grow? 6602
why does a tree stop growing? 3652
why do we ever stop growing? 310
- Grudziadz**, Poland, the castle hill, 5037
- Grue, et le Crabe Prudent**, La, story in French, 6446
- Grünewald, Matthias**, German religious painter, 1188
- Gryn, Hermann**, escape from lion, 3247
- Grphyhus, Andreas**, German poet, 4696
- Guacharo**: see Oil-bird
- Guadalcanal**, largest of British Solomon Islands, 3427
- Guadalquivir**, river of Andalusia, Spain, at Seville, 5284
bridge at Cordova, 5285
- Guadarrama**, Sierra de, Spanish mountains, 5270
- Guadiana**, river of southern Spain and Portugal, 5270, 5402
- tropical verdure**, 2130
- Guan**, red-tailed bird, 4251
- Guano**, animal, habits and home, 1533
picture, 1532
- Guano**, from Atacama desert, 2375
- Guaquil**, town on Lake Titicaca, 7015
- Guardianship of Infants Act (1925)**, 6254
- Guardi, Francesco**, Venetian painter, 935
- Guard the Block**, game, 6423
- Guatemala**, Central American republic, 7008; flags, in colour, 6973
map, general and political, 7030
map, in colour, 7103
scenes, 7014, 7015
sculptured boulevard, 6991
- Guatemala City**, scenes, 7014, 7015
modern airport, 7003
- Guava**, fruit, in colour, 2688
- Guayaquil**, port of Quito, capital of Ecuador, 7021
railway in streets, 7011
- Guayule rubber**, obtained from parthenium plant, 2568
- Gudea**, king of Chaldea, 6272, 3900
relics of, discovered by De Sarzec, 6870
- Gudgeon**, carp family, 4979
in colour, facing 5197
- Guedalla, Philip**, British writer, 3828
- Guelder rose**, what it is like, 4781
flower, 4779
fruit, in colour, 3670
- Guelph**, or Guelif, Italian form of German *Welf* (wolf), 4581
- Guénot, Auguste**, French sculptor, 4643
- Guercino, Giovanni**, Italian painter, 936
- Guerza**, white-tailed monkey, 161
- Guericke, Otto von**, German electrician and scientist, 609, 5324
light produced from electricity, 234
portrait, 5323
vacuum experiment, 5325
- Guernsey**, Channel Islands, flag, in colour, 6966
- Guernsey cattle**, characteristics of breed that originated in France, 1154
- Guessing proverbs**, game, 8848
- Guests at the Feast**, story, 156
- Guiana**, South American territory divided between the British, French, and Dutch, 7002
old Dutch settlements in, 5531
- Maps of Guiana
- animal life of the country, 7028
general and political, 7023
in colour, 7104
physical features, 7024
plant life, 7026
- Guiana**, British, South American colony, 3556
airport, 3560
Bartica Grove, 3562
flag, in colour, 6967
Mount Roraima, 2249

Guicciardini, Francesco, Florentine historian and statesman, 4583
Guido Reni : see Reni, Guido
Guildford, capital of Surrey, arms, in colour, 4990
 bypass road through Hog's Back, 2168
Guildhall, London, architecture of porch, 4230; exterior, 4237
Guillain, Simon, French sculptor of time of Louis XIII, 4644
Guillemot, bird, food, 4000
 group on rocky crag, 3999
 in colour, 2765, 2900
Guillotine, French instrument for beheading condemned persons, 652
 for cutting paper, 3386
Guinea, name applied to practically all tropical West Africa, 5402
 French, 6749
 Portuguese, 6752
 Spanish territory, 6754
 grass tree, 3059
 map, in colour, 7098
 oil-palm grove, 2941
Guinea, value of : see old English coins, 7070
Guinea fowl, African pheasant, 4254
 crested, 4249
Guinea-pig, of cavy group, 1036
 young perfect at birth, 2516
 how to keep them, 2734
 group, 1033
 hair, seen through microscope, 1910
Guinevere, Queen, story, 6942
 in nunnery garden, 6947
Guira cuckoo, nesting habits, 3379
Gujarat cattle, characteristics, 1155
Gulf Stream, climate affected by, 2496
 how big is it and how fast does it flow? 6228
 map showing its course, 6228
 painting by Winslow Homer, 3293
Gull, bird, characteristics, 3996
 black-headed gull, in colour, 2765
 group alighting, 3995
 in flight, 2637
 various kinds, 3997
 various kinds, in colour, 3021-3
Gulliver's Travels, satire on government written by Jonathan Swift, 1730
Gum, canvas cloaks of Spaniards in 1615 made waterproof with it, 1165
 plants that yield it, 2937
Gum arabic, obtained from acacia trees, 2937
 plant, in colour, 2685
 tree growing in Sudan, 2941
Gum dragon : see Tracacanth
Gummidge, Mrs., character in Dickens's novel David Copperfield, 3460
Gun, energy in a loaded gun has to be released, 1614
 pump gun invented by Constantinesco, 3648
 why does the flash precede the noise? 4996
Gundulf, monk and architect, built the Tower of London, 4226
Gunpowder, energy that has to be released, 1614
Gurnard, fish, characteristics, 5102
 red gurnard, 5105
 species, in colour, 5098, 5099
Gurney, Goldsworthy, English inventor, 2754
 trying his road coach, 2749
 watching Trevithick at work on his engine, 2755
Gurney's pitta, bird, in colour, 3143
Gustavus I, Vasa, Swedish king and hero, Sweden freed from Denmark, 5146
Gustavus II, Adolphus, Swedish soldier, king, and national hero, 4294, 4546
Gustavus III, Swedish king, his part in Swedish literature, 4942
Gutenberg, John, German inventor of printing, 1511
 statue, 1517
Guthrum, the Dane, King Alfred in his camp, 2905
Guttapercha, description and uses, 2568
 use in telegraph cables, 1604
 plant, in colour, 2685
 tree, fine specimen, 2565
Cuttée, heraldic term explained, 4986
Guy Fawkes Plot, attempt to blow up House of Lords, 1206

Guy Mannerling, chief character in Sir Walter Scott's second novel, 2722
Guy's Cliffe, Warwick, old mill, 1831
Gwallor, India, fort and palace, 2951
 Jama Masjid, 5634
Gwyrch Castle, Abergele, Wales, 1462
Gwyniad, fish, in colour, facing 5197
Gwynn, Nell, portrait by Lely, 1927
Gyantse, town of Tibet, 6512
Gymnastic exercise, boys, 253
Gymnastic trick, 2112
Gymnosperm, meaning of word, 6490
Gymnura, relative of hedgehog, 296
Gypsies, who they are, 6102
Gypsum, mineral, 1302
Gyroscope, its uses on ships, 3575
 gyro-compass, 3575
 on bridge of Queen Elizabeth, 3704

H

Haarlem, town of Holland; Frank Hals, its great artist, 1424
 Ruysdael's pictures of city, 1426
 siege by Spaniards, 5528
 town hall and its architecture, 6371
 great church, 5539, 5987, 6002
Habeas Corpus Act (1679), securing English subjects against arbitrary imprisonment, 1212
 what does it mean? 5620
Habits, can we break our habits? 4268
Hacker, Arthur, his painting, The Hours, 3523
Hackney filly, 1892
Haddock, 1000 young at a time, 4858
 in colour, 5099
Haddon Hall, early English manor house, 6236, 6252
Hadfield, Sir Robert, inventor of manganese steel, 4104
 portrait, 4102
Hadrian, Roman emperor, builder of Hadrian's Wall, 2877
 revival of art during his reign, 4404
 portraits of emperor and his wife, 2878
Hadrian's Wall, example of Roman architecture in England, 598, 5865, 723
Haematite, form of iron ore, 6670
 picture, 1303
Haemoglobin, atoms composing wonderful substance in blood, 942
 effect of alcohol on red cells of the blood, 944
 how water gas affects it, 3336
 red colouring matter, 5000
Ha'iz, Persian philosopher and grammarian, 5675
Hagar, story of Ishmael's mother, 624
 sent away by Abraham, 623
 with Ishmael in the wilderness, 620
Hague, The, administrative capital of the Netherlands, 5531
 museum, 6612
 permanent court of International Justice, 6478, 6482

Pictures of The Hague

bandstand scene, 5525
 general view, 5539
 Hall of the Knights, 5539
 Palace of Peace, 5539
 Royal Palace, 5538
 William the Silent's statue, 5539
Hahn, Dr. Otto, uranium atom work, 6317
Haifa, chief port of north Palestine, 6263
 general view, 6278
Haig, Douglas, Earl, field-marshal, his victory near Amiens (1917), 1709
Hail, how it is formed, 2867
 what is it? 5000
 hailstones, 4502
Haileybury College, arms, in colour, 4989
Hair, formation and growth, 1434
 how it can sometimes stand on end, 1434, 3175
 what is the use of our hair? 5981
 why does it grow after the body has stopped growing? 5493
 why does it not hurt when cut? 2787
 why does the hair stand on end with fright? 815
 why do some people lose it? 3890
 why is granny's hair grey? 6353
 greatly magnified, 1429
 on plants, 6494
Hair Moss, flowerless plant, 3408
 life-story, 1069

Hairpin, worn by Cretans 4500 years ago, 796
Hair-seal : see Sea-lion
Hairy armadillo, the peludo, 2274, 2275
Hairy-armed bat, 290
Hairy-backed springtail, under microscope, 1914
Hairy bamboo rat, 1031
Hairy-bodied saw-fly, in colour, 5714
Hairy dasyptoda bee, in colour, 5714
Hairy-eared rhinoceros, 1771
Hairy-footed jerboa, animal, 1032
Hairy-leaved arabis, related to Alpine rock-cress, 5520
Hairy mint, what it is like, 6011
Hairy tare, flower, in colour, 4238
Hairy tortoise beetle, in colour, 6336
Hairy violet, what it is like, 5023
 flower, in colour, 5141
Haiti, Negro republic in the West Indies, 898, 7022
 flags, in colour, 6973
 general and political map, 7030
 map, in colour, 7103
Hake, fish, 5105
Hakodate, port of Hokkaido, Japan, 6623
Hakon the Good, king of Norway, 5157
Halban, Dr., French scientist, heavy water, in atom experiments, 4814
Halberd-leaved orache, 5762
 flower, in colour, 5643
Halcyon, derivation of word, 3268
Haldane, Lord, British statesman, 2138
Hale, G. E., Moon photographed, 3481
 his portrait, 3611
Halfpenny, wandering halfpenny, trick, and picture, 5638
Halibut, fish, life-story, 5105
 in colour, 5098
Halicarnassus, famous Mausoleum of Mausolus, 4277, 4885
Halicuts, wild bee, 5841
Haliotis, shell, 1177, 1180
Hall, Charles Francis, American Arctic explorer, 6433
Hall, Dr., discoveries at Ur, 6871
Hallam, Arthur, Tennyson's great friend, 3338, 6909
Hallam, Henry, English historian, 3095, 3093
Hallelujah Battle, Celtic victory over Saxons and Picts, 2614
Halley, Edmund, English astronomer, 3613, 3611
Halley's comet, 3602, 3606, 3613
 picture, 3604
Hall of Mirrors, Versailles, German Empire proclaimed, 4300
 treaty of Versailles ends First World War, 4600
Halo, what causes haloes round the Sun? 3166
Hals, Frank, one of the greatest Dutch portrait painters, 1424

Pictures by Frank Hals

Banquet of Archers of St. Adrian, 3657
 Banquet of Archers of St. George, 4149
 man and wife, 3658
 man with a sword, 1423
 nurse and child, 73
 The Laughing Cavalier, 1426
Halymenia, strap-shaped seaweed, 3416
Hama, Syrian town, 6270
Hamadan, ancient Ecbatana, Persian city, 6385; general view, 6197
 supposed tomb of Esther and Mordecai, 6395
Hamadryads, nymphs of the trees, 3531
Hamah, Syria, water-wheel, 5969
Haman, his plot against the Jews, 3225
 denounced by Esther, 3225
Hamath stones, covered with writings of the Hittites, 6372
Hambledon Hills, Yorkshire, view, 470
Hamlicar, Carthaginian general, conquers Spain, 6308
Hamilton, Alexander, American statesman, portrait, 3791
Hamilton, capital of the British colony of Bermuda, pictures, 3553, 3552
Hamlet, story of Shakespeare's play, 6163, 6531
 death of Ophelia, 1106
 Ophelia and the king and queen of Denmark, 1104

- sculpture by Sándor Jaray, 5258
 watching gravediggers at work, 6163
Hammer, Nasmyth's steam, 5946
 why will it break a stone? 4894
Hammerfest, town of Norway, 5157
Hammerhead, bird, characteristics and nest, 3871, 3868
Hammerhead shark, man-eating species, 5228, 5231
Hammerken, Thomas: see Thomas à Kempis
Hammer of God, Charles Martel's popular title, 5251
Hammurabi, Babylonian king, author of a famous code of laws, 6273, 6798
 laws carved on stone, 2034
 translation of his enactments, 428
 dictating laws, 6799
 his famous code, 6805
Hampden John, English statesman and patriot, 526, 1208, 2110
 portrait, 521
Hampshire, county of southern England, places in, 7160
 road map, 7116
Hampshire ram, 1281
Hampstead Garden Suburb, example of Town Planning, 6609
Hampton Court, built by Wolsey, 6236
 its architecture, 4227, 6237, 6247
 palace gateway, 1087
 view of, 6239
Hamster, home and habits, 1035
 European species, 1031
Hamsun, Knud, Norwegian novelist, 4941
Han, Belgium, grottoes at, 5646
Hancock, American leader of revolt against Britain, 3793
Hancock, Thomas, effect of heat on rubber discovered by, 1168
Hand, its origin, 10
 bones described, 1694
 frog has hands, 452
 why cannot we feel air-waves with our hands? 6355
 why do our hands become warm after playing with snow? 4762
 why do our hands keep dry when dipped in quicksilver? 4759
 why have we lines on them? 189
 why is our right hand the stronger? 1183
 diagram of bones of human hand, 1695
Hand (measure): see old English measures, 7069
Handel, George Frederick, German composer, 142
 playing music in a garret, 141
 portrait, 145
 thinking out the Hallelujah Chorus, frontis., Volume 9
Handkerchief: see Pocket-handkerchief
Handle, Dead Man's, what it is, 2665
Handley Page, Hermes airliner, 4688
Handy Pandey, nursery rhyme, 102
Hanging, old punishment for stealing, 243, 4902
Hanging Gardens, one of the Seven Wonders, 4884, 4888
Hanging parrot, habits, 3502, 3499
Hangnest, bird, 2895
 pictures, 2893, 2903-4
Hankow, Chinese port on the Yangtse-Kiang, 6501, 6509
Hannah, Samuel's mother, 1737
 bringing Samuel to Eli, 1739
Hannibal, Carthaginian general, 6806
 passage of the Alps, 2028, 4352
 Romans defeated but unconquered, 1406
 route of invasion of Italy, 4794, 5411
 crossing the Alps, 6803
Hannington, James, English African missionary, 1140, 1137
Hanno, Carthaginian navigator, 2997, 6741
Hanoi, town of Indo-China, 6513
 street scene, 6516
Hanover, House of, dynasty, 4294
 incompetence of the Georges and its result, 1327
Hansa, voyage of German ship, 6433
Hanseatic League, union of ports of Northern Europe in the Middle Ages, 4310, 5526
Hansel and Gretel, story and pictures, 3617
Hansom, Joseph, who was he? 3038
Hanson, Nikolai, Antarctic grave, 6552
Hanson, Timothy, grass named after him, 2186
Hanssen, Helmer, Norwegian explorer, 6558
Hanuman, sacred monkey, 165
Hanyang, Chinese town, 6502
Hapi, Egyptian god, sculpture, 3896
Happiness, success not same thing, 1735, 2852
 Sydney Smith on happiness, 3462
 Springtime, by E. A. Hornel, 3459
Hapsburg, Austrian imperial dynasty, 4545, 4670
Hapsburg, Rudolf of, founder of Austrian imperial dynasty, 4293, 4545, 4670
 refusal to drink water, story, 6932
 his last ride, 4545
Harbin, town of Manchuria, 6511
Harbour, invisible pilot device, 5126
Hardanger Fiord, Norway, 5150
Hard fern, in colour, 1797
Hard grass, seed works its way, 946
Hard-heads: see Knapweed
Harding Bridge, over the Ganges, 555
Hard pimplet anemone, in colour, 1555-56
Hard prickly shield fern, in colour, 1798
Hard red Calcutta wheat, 1328
Hardwicke's spiny-tailed lizard, 4493
Hardwick Hall, Derbyshire, 6250
Hardy, Thomas, English author and poet, 3584, 4083: portrait, 3579
 See also Poetry Index
Hare, habits, 1036, 1033
Hare and the Hungry Man, story, 900
Hare and the Tortoise, fable with picture, 3745
Harebell, what it is like, 5020
 member of Bellflower family, 4544, 4781
 flower, in colour, 5141
Hare's ear, flower, in colour, 4662
Hare's foot clover, flower, 4540
Hargeisa, capital of British Somaliland, 3316
Hargreaves, James, English mechanic who invented the spinning jenny, 172, 5939
Harington, Professor, made thyroxin, 2628, 3174
Harland & Wolff, Belfast, shipbuilders, 4104
Harlech, town of Merionethshire, picture, 963
Harlequin, Roman origin, 5427
 who is he? 5494
Harlequin beetle, Brazilian species, 6329
Harmodius, Greek statue, 4148
Harmonica, how to play, with pictures, 3107
Harmonious Blacksmith, piano composition by Handel, 144
Harmony, its meaning in music, 6303
Harmsworth, Alfred, Lord Northcliffe, 4112
Harmsworth, Harold, Lord Rothermere, 4112
Harnessed antelope, 1399, 1401
Harold, king of England, slain at battle of Hastings, 708, 3149
 Bayeux Tapestry pictures, 709-716
 meeting William the Conqueror, 707
Haroun-al-Raschid, ruler of Baghdad, caliph of the Arabian Nights, 6806
 his wife's tomb at Baghdad, 5624
 stories about him, 657, 3742, 5625
 who was he? 5980
 sends his best friend to die, 6803
Harp, Egyptian use of similar instruments 5614
Harpies, mythological monsters, 3529
Harpignies, Henri Joseph, French landscape painter, 2792
 his painting, The River Allier, 3776
 scene near Hérisson, painting, 3777
Harsichord, how it works, 675
Harpy eagle, 3634
Harpy Tomb, Greek relic, 5500
Harrier, bird, 3632
 hen harrier, in colour, 2897
Jardine's, Australian species, 3633
 marsh, in colour, 3024
 Montagu's, in colour, 3022, 3631
Harrier, hound that hunts by scent, 670
Harrier hawk, 3635
Harriet Tubman, story and picture, 4485
Harris, Joel Chandler, American writer of folk tales, 404, 4333, 5583
 portrait, 399
Harris, Vincent, British architect, 6611
 Manchester Reference Library, designed by, 6614
Harrison, Benjamin, his archaeological discoveries in Kent, 6997
Harrison, John, English inventor, 3738
 portrait, 3733
 working on his clocks, 3737
Harrod, Charles Digby, founder with William Kibble of famous store, 4109
Harrow, A.: see Poetry Index
Harrow School, arms, in colour, 4989
Hart, animal family, 1397
Harte, Francis Bret, American novelist and poet, 4205, 4333
 See also Poetry Index
Hartebeest, characteristics, 1400
Hartog, Dirck, Dutch navigator, 2387
Hartshill Castle, Nuneaton, 1835
Hart's tongue fern, in colour, 1798
Hartwell, Charles L., his sculptures, The Goatherd's Daughter, 4771
Hartwick, Rose: see Poetry Index
Harvard University, Massachusetts, 3684
 printed first American book, 1517
 picture, 3683
Harvest bug, mite's larva, 5599
Harvest mouse, 1036, 1032
Harvey, William, English physician, discoverer of circulation of the blood, 1064, 1195, 2508, 5569, 5570
 Pictures of William Harvey at Edgell, with children of Charles I. 2505
 explaining circulation of the blood, 2507
Harwich, port of Essex, at the mouths of the Orwell and Stour, 5648
Harz Mountains, Germany, 4422
 Spectre of the Brocken, what it is, 3168, 4306
Hasdrubal, Carthaginian general, 6806
Haslemere, Surrey, old almshouses, 6250
Hassall, John, painting, Agincourt, 957
Hassan, Abdul, Arabian mathematician, 2296
Hasting, Danish sea-king, 2907
Hastings, seaside resort and ancient Cinque Port in East Sussex, picture of castle, 962
 the Promenade, 345
 view of old town, 1591
Hastings, battle of, fought in 1066 between the English under Harold II and William of Normandy, 708, 717, 3149
Hastings, Warren, English statesman, 2946
 Burke at trial of Hastings, 6225
 portrait by Lawrence, 2175
Hat, Murdock's wooden one, 2748
 why is a hat called a Billycock? 6232
Hate, civilisation held back by it, 2282
 is it right to hate anything? 4516
Hatfield House, Hertfordshire, architecture, 6237, 6246
Hathaway, Anne, Shakespeare's wife, 4474
 cottage at Stratford-on-Avon, 1085
Hathor, splendid statue of Egyptian goddess, 6888, 3895
Hatshepsut, Egyptian queen, 6876
 hall with avenue of sphinxes, 3901
 temple built at Dêr-el-Bahari, 5380
Hausa sheep, characteristics, 1285, 1281
Havana, capital of Cuba, yellow fever's ravages, 2627
 International Trade Charter signed at, 6484
 Columbus cathedral, 7009
 street scene, 7009
 the Exchange at, 7009
 tobacco plantation, 2936
Havelock, Sir Henry, English general, 2110, 2947
Havelok, Prince, story, 4363
Haverfield, Miss, portrait by Gainsborough, 2052, 72
Havergal, Frances Ridley, English writer of hymns, 1758

portrait, 1759
Havre, Le, French port, 4170
Haweswater, Mardale, Westmorland, mile-long dam, 4504
Hawaii, Pacific islands annexed by United States, 3796
 Captain Cook's death, 2381
 coming of Christianity, 5827
 craters like the Moon's, 3486
 flag, still retains the Union Jack, 6963
 flag, in colour, 6971
 map, in colour, 7106
Hawfinch, its characteristics, 2901
 in colour, 2765
Hawk, group of birds of prey, 3626
 harrier hawk, 3635
 sparrowhawk, in colour, 2766
Hawk-bit, flower, in colour, 4663
Hawker, R. S. : see Poetry Index
Hawker, jet-fighter aeroplane, 4689
Hawkesbury River, New South Wales, 2571
Hawkins, Anthony Hope, English novelist, 3712
Hawkins, Sir John, English admiral, 5210
 introduced potato into Europe, 2436
Hawklet, rough, flower, in colour, 4419
Hawk-moth, caterpillar, 6201
Hawk-owl, habits, 3504
Hawksbeard, different varieties, in colour, 4905, 5144, 5393, 5395
Hawksbee, Francis, English electrical pioneer, 5324
Hawk's bells, heraldic charge, 926
Hawksbill turtle, reptile, 4497
Hawk's lure, heraldic charge, 926
Hawksmoor, Nicholas, architectural work in London and Oxford, 6469
 London churches, 4228
Hawkweed, different kinds, 4782
 mouse-ear, flower, in colour, 4287
 seeds distributed by wind, 945
 wall hawkweed, flower, in colour, 5142
Hawkweed picris, what it is like, 5266
 flower, in colour, 5395
Hawthorn, fertilisation of flower, 4040
 why called whitethorn, 4039
 fruit, in colour, 3668
 with flower and leaves, 4152
Hawthorne, Nathaniel, American novelist and writer of fairy tales, 401, 4332, 399
Hawthorn saw-fly, with cocoon, 5843
Hay, Colonel John, American statesman, author, and poet, 4205
 See also Poetry Index
Hay, how it should be made, 3306
 why does grass turn yellow after being made into hay? 6226
 bringing in harvest, 3303
 clover crop in Manitoba, 2187
 men loading, 2477
 reaping, 2185
Hay and Straw Weight, 7069
Haydn, Joseph, Austrian composer, 144, 5737
 playing piano during siege of Vienna, 143
 portrait, 145
Hayes, Dr. Isaac, American Arctic explorer, 6433
Hay-scented buckler fern (colour), 1799
Haystack, why it catches fire, 5733
 being built up, 2187
Hay Tor, Devon, rocks, 470
Hazel, flowers and fruit, 2068
 hazel nut, in colour, 3667
 how they grow, 2067
Hazel apoderus, beetle, in colour, 6336
Hazlitt, William, English essayist and literary critic, 2971 ; portrait, 2969
Head, bones of the head, 1691
 scalp under microscope, 1913
Headache, why do some people get headaches before a thunderstorm? 1551
 why do we get headaches in a crowded room? 2787
Health, growth of legislation during 19th century, 1584
 in State schools, 6255
 League of Nations and, 6487
 legislation of Moses, 544
 National Insurance Act, 6256
 overcrowding evil, 5886
 World Health Organisation of United Nations, 6487

are we healthier than our ancestors? 1183
Hearing, the ear's machinery, 3297
 direction of sound not always detected, 3298
 more acute at night than by day, 1046
 sound and hearing, 4098
 can a fly hear? 1048
 do we hear in our sleep? 4514
 why are blind people so quick at hearing? 2666
 why can we hear better when we shut our eyes? 1181
 why can we hear the scratching of a pin at the other end of a pole? 1182
 why do we hear better on water than on land? 312
 ear collecting sound-waves, 3297
 inside of ear, diagrams, 3299
Heart, the body's pump, 1195
 circulation of the blood, 1197
 its beating, 856, 976
 pulse a key to its working, 1196, 6465
 rate of beat in various animals, 7068
 what makes the heart beat? 4761
 diagram, showing its position, 1196
Heart of Midlothian, The, novel by Sir Walter Scott, 2722
 source of story, 5334
Heartsease : see Pansy
Heart-shaped cam, for reciprocating motion, 6351
Hearts of Oak, song by Garrick, 1264
Heat, amount received by planets, 7061
 atom energy produces terrific heat, 4814
 conduction and convection, 2173, 3208, 5321
 expansion caused by heat, 684, 3208
 form of motion, 139, 4595, 5317
 latent and specific heat, 5566
 law of conservation of energy, 5442
 mechanical power and heat, 3208
 metals the best conductors, 5321
 of electric furnace, 1827
 plants' growth hastened, 585
 point at which heat ceases, 5318
 produced by friction, 5441
 radiant heat explained, 5320
 relation to light, 4099
 specific heat of objects, 5567
 terrific heat of the stars, 3851
 why water boils, 5318, 5321

Wonder Questions

does a bridge expand in the sun? 6233
 is the heat of the Sun the same as the heat of a fire? 6345
 where does our warmth come from? 5128
 why are some days hotter than others? 5000
 why cannot boiling water be made hotter? 5367
 why does a bottle full of hot water keep hot longer than one half full? 4996
 why does a flame rise to a thing held above it? 6599
 why does a piece of hot iron turn red? 5245
 why does a piece of ice make a drink colder? 3890
 why does a pin get hot if rubbed on a piece of stone? 309
 why does heat make paper curl? 3652
 why does heat make things seem to quiver? 1551
 why does hot water crack thick glass more easily than thin? 5364
 why does iron bend when it is hot? 2043
 why does it crack wood? 5984
 why does water take up more room when hot? 5250
 why is the fire hot? 818

Pictures

effect of heat on gas, 5445
 effect on railway line, 5441
 electric furnace, 1229
 gas, electric furnace, and Sun compared, 1227
 how quantity is measured, 5565
 See also Temperature
Heath, flowers fertilised by bees, 5019
 members of family, 4728, 5892, 6011
 common species, 5019, 5021
 series, in colour, 5141-44
 smooth sea heath, in colour, 5643
Heather, fertilisation methods, 5019
 root larger than upper growth, 458

flower, in colour, 5143
Heath fire, causes, 5733
Heath fritillary, in colour, 6207
Heathrow, London airport, 429
 Control tower, 436
Heavenly Twins, Castor and Pollux, 5883
 constellation, 3854
Heavy Bags of Gold, story and picture, 3741
Hebe, cupbearer of the gods, 3517
Heber, Reginald, Bishop, English writer of hymns, 1758, 1759
Hebrew, language and literature, 5673
 much of the Bible originally written in Hebrew, 6858
 Old Testament language, 485
Hebrides, group of islands off the Scottish west coast, 518, 765, 5618
 ancient beehive-shaped huts, 5376
 seen from the sea, 341
Hebron, ancient city of Judea, Palestine, 6269
 general view, 3470
Hecate, goddess of the underworld, 3516
Hecla, volcano in Iceland, 2245, 5149
He Comes in the Night, rhyme and picture, 3937
Hector, his story in the Iliad, 5304
Hecuba, in the Iliad, 5303
Hedge garlic, what it is like, 4290
Hedgehog, animal's characteristics, 296
 how to keep it as a pet, 3228
 spines developed from hair, 294
 drinking, 293
Hedge mustard, plant, 206
 flower, in colour, 4286
Hedge parsley, genus *Caucalis*, 6492
 flower, in colour, 4285
Hedgerow, its flowers, 4283
 series of flowers, in colour, 4285-88
Hedge sparrow, its feeding habits, 6855
 picture, 2892 ; in colour, 2766
Hedge woundwort, in colour, 4287
Hejaz : see Hejaz
Hedley, William, English engineer, 2752, 3214
 his engine, Puffing Billy, 2747
Heel, why are high heels dangerous? 5735
Hegel, Georg Wilhelm Friedrich, German philosopher, 4845
Hegeso tombstone, 4275
Heigra, what it is, 2295
Heidelberg, city of Germany, Renaissance architecture of castle, 6371
Height, how do we know the height of a mountain? 309
 why am I giddy when looking down from a height? 5246
Heilmann, Andrew and Anton, Gutenberg's partners in printing, 1514
Heimwehr, Austrian political organisation, 4549
Heine, Heinrich, German romantic poet and critic, 4699 ; portrait, 4605
 statue by Ernst Herter, 5260
Heinemann, Fritz, his sculpture, After the Bath, 5259
Heinrich von Morungen, German poet, 4696
Heir and the Will, story, 2634
Hejaz, kingdom of western Arabia, 6264
 flag, in colour, 6973
Hejnal, quaint Polish custom, 5026
Helen, in Shakespeare's *All's Well that Ends Well*, 6043
 in *Midsummer Night's Dream*, 6294
 painting by Sir E. Poynter, 981
Helen of Troy, story in Iliad, 5303
 who was she? 4518
 walking on walls of Troy, 5305
Heliades, demi-goddesses, 3518
Helioidal wire, what it is, 5846
Helicon, Mount, home of Muses, 3531
Helicopter, compared with bird's flight, 5076 ; picture, 4687
 plastic cabins, 4009
 sectional drawing, 4691
Heligoland, North Sea island, legend of the island, 534
Heliogabalus : see Elagabalus
Heliograph, what is a heliograph? 3038
 message being tapped out, 3039
Heliopolis, Egypt, Cleopatra's Needle taken from temple, 5380
 Palace Hotel, 6880

Helios, or Sol, god of the Sun, 3518
wonderful statue, 4884
Helium, an element, 4222
gas used for airships, 4445
in heavenly bodies, 12, 3850, 3974
liquefaction of the gas, 2918
when discovered, 4221
Heli, place of punishment, 3531
Hellas, poem by Shelley, 2598
Hellenes, name by which the Greeks of the classical period were called, 4024
Hellenistic art : see Greek art
Hellespont, passage by Xerxes, 6799
Helmet, in heraldry, 4986
Helmholtz, Hermann von, German scientist, 6313, 6427; portrait, 6309
Helm Wind, what it is, 2415
Héloise, French nun, beloved of Peter Abelard, 1387
Helis, its meaning, 6721
Helsingfors : see Helsinki
Helsingör, Danish port, 5149
Helsinki, capital and chief port of Finland, formerly Helsingfors, 5154 pictures, 5154, 5169
Helvellyn, peak of the Cumbrian Mountains, 464, 472
Helvetic Republic, Switzerland reorganised by Napoleon, 4672
Helvetians, Swiss Celtic tribe in Roman times, 4668
Hemans, Mrs. Felicia, English poet, 3953; portrait, 3953
See also Poetry Index
Hemisphears : see Earth
Hemlock, of Parsley family, 2438
flower, in colour, 4287
storksbill, in colour, 5643
water hemlock, in colour, 6128
Hemming, how to do it, with picture, 2359
Hemp, cultivated for its fibre, 2564
common red hemp nettle, in colour, 4663
in rope-making, 179-182
plant, in colour, 2685
sisal hemp growing in Queensland, 2560
Hemp agrimony, 6010, 6009
Hemprich's heterodactyle anemone, in colour, 1556
Hem-stitching, how to make, with picture, 2860
Hemy, Charles Napier, English marine painter, How the Boat Came Home, painting by, 2554
Hen, does a hen know that chickens will come out of her eggs? 1184
why does a hen not crow? 5247
Hen and the Fox, fable, 4115
Henbane, of same family as tobacco, 2942
seeds produced, 3180, 3888
use in medicine, 4544, 5784
flower, 4540
Henderson, Elsie, British sculptor, 4896
Henderson, Mr., English consul who bought the site of the Hittite capital, 6872
Hendrik, Hans, Kane's Eskimo follower, 6432
Hengist, Jute leader, 592
Hen harrier, bird, in colour, 2897
Henley, William Ernest, English patriotic poet, 4081; portrait, 4077
See also Poetry Index
Henri, Robert, American painter, 3288
Henrietta Maria, wife of Charles I, 521
Greenwich Palace built for her by Inigo Jones, 6241
hiding in barn, 1207
Henry I, king of England, charter given to English people, 718
Henry II, king of England, great kingdom established, 718, 720
his French possessions, 3920
Ireland first claimed, 718, 3066
lion substituted for leopard in national arms, 4983
Henry III, king of England, reign that gave back England to English, 840
tomb in Westminster Abbey, 951, 837
Westminster Abbey rebuilt, 836, 5874
Henry IV, king of England, 956
Henry V, king of England, chantry in Westminster Abbey, 5874
conqueror at Agincourt, 956
fleur-de-lys in national arms, 4984
Shakespeare's play, 6290

funeral in Westminster Abbey, 959
Henry VI, king of England, 958, 960
Eton College founded, 960
loss of French possessions, 958
Henry VII, king of England, Columbus's plans rejected, 4593
control of Irish affairs, 8066
wars of the Roses ended, 1073
standard, in colour, 6968
Henry VII's Chapel, Westminster, 5874
exterior, 4233; interior, 4236, 5876
Henry VIII, king of England, quarrel with the Pope, 1076
dissolution of the monasteries, 1081
Hampton Court given him, 6237
wives and what became of them, 1076

Pictures of Henry VIII
embarking at Dover, 1074
Field of the Cloth of Gold, 1074
foundation of St. Paul's School, 1080
portrait by Holbein, 1078
portrait, with Anne Boleyn and Elizabeth, 4133
Henry II, king of France, 3922
Henry IV, of Navarre, king of France, art greatly encouraged by him, 1631, 4644, 6370
religious toleration granted, 3922
portrait, 3917
rebuked by Palissy, 3857
Henry IV, emperor of Germany, penance for defying Pope, 6921
waiting for the Pope's pardon, 4295
Henry, George, Scottish painter, 2545
Henry O., American writer, 4335
portrait, 4331
Henry, Patrick, making a speech, 1333
Henry of Blois, bishop, endows hospital at Winchester, 6240
Henry the Navigator, Portuguese prince, 4398, 6741
Henson, Matthew, Negro who accompanied Peary to the North Pole, 'n 1909, 6442
Hephaestus : see Vulcan
Hepplewhite, George, English furniture maker and designer, 3860, 6737
Hepplewhite chair in walnut, 6735
Hepworth, Jocelyn Barbara, English sculptor, 4896
Hera : see Juno
Heraclius, Byzantine emperor, 5772
Herald Island, De Long's expedition icebound, 6438
Heraldry, its story, 4983
what it means, 924

Pictures of Heraldry
animal charges, in colour, 927
cadency, examples, 4986
charges, in colour, 926, 4986
Coats-of-Arms, 4985-91
crosses, 926
French, German and Italian arms in colour, 4992
helmets, crowns, and coronets, 4986
king's trumpeter, 4983
ordinaries, in colour, 925
plant devices, in colour, 928
roundels, in colour, 926
shields, in colour, 925
Herat, town of Afghanistan, 6391
Herb, medicinal uses, 1438
Herbarium, what it is, 6345
Herb benet, what it is like, 4780
flower, in colour, 4907
Herbe du Siege, French name for knotted figwort, 5892
Herbert, George, English poet and writer of hymns, 1760
See also Poetry Index
Herbert, J. R., Childhood of Jesus, painting, 3592
Herbert, Sidney, English statesman 3986
Herb Garden, how to make a windowsill one, 1496
Herb robert, flower, in colour, 4285
Herb twopence : see Moneywort
Herculaneum, frescoes discovered in excavations, 324
Roman houses, 4404
story of the excavations, 6995
head in bronze, sculpture, 70
statues from Herculaneum, 5010
Hercules, his twelve labours, 6325
quest of golden apples, 5244

saves Hesione, 6692
sculpture by Glycon, 4401
Hercules (constellation), Sun travelling toward, 3728
Herder, Johann Gottfried von, German poet, 4897
Here am I, little jumping Joan, nursery rhyme picture, 232
Heredity, what it means, 6347
Hereford, Viscount, coat-of-arms, 4987
Hereford, capital of Herefordshire, 6240
Norman work in cathedral, 5886
shrine of St. Thomas de Cantelupe, 5873

Pictures of Hereford
arms of city, in colour, 4990
cathedral, 5878, 7151
chained books in cathedral, 485
Tudor house, 1085
Hereford cattle, characteristics, 1154
fine specimen, 1160
Herefordshire, western English county, places in, 7161
road map, 7151
Herefordshire, pudding-stone, pebbles cemented by silica, 2004
Hereros, tribe of South-West Africa, 3188
Here's the Sulky Sue, rhyme picture, 231
Hereward the Wake, Anglo-Saxon hero, stories of his youth, 4735
Here we go round, rhyme picture, 230
Here we go up, rhyme picture, 230
Heriot's Hospital, Edinburgh, 5694
Herjulfsson, Bjarne, Viking navigator, 1014
Herkomer, Sir Hubert von, English landscape and portrait painter, 2545
The Council of the Royal Academy, painting, 2543
Hermann, German hero who resisted the Romans, 1538, 4292
Hermes, or Mercury, god of ancient Greece, 3516, 4484, 4964
statue by Praxiteles, 4271, 4273
ancient Greek sculpture, 4273
See also Mercury
Hermes, Handley-Page airliner, 4688
Hermia, in Shakespeare's Midsummer Night's Dream, 6294
Hermione, in A Winter's Tale, 6051
Hermit crab, in whelk shell, 4857, 5473
pictures, 5474, 5475, 5477
Hermion, Mount, southernmost peak of Lebanon in Syria, wheat from its slopes, 1325
view, 3468
Hermoso, Eugenio, his painting, The Goatherd, 3403
Hero, in Shakespeare's Much Ado About Nothing, 6046
Hero and Leander, story, 6816
The Last Watch of Hero, by Lord Leighton, 2549
Herod Antipas, his inquiries concerning Jesus, 3590
Herodotus, Greek historian, 5182
mention of England, 2397
on ancient Greek navigation, 770
reference to ancient oil supplies, 2961
sculptures mentioned in his writings found near Smyrna, 6872
visit to Egypt, 6860, 6877
his portrait, 5179
Herod's Gate, Jerusalem, 3466
Herod the Great, Jerusalem rebuilt by him, 3717
Heroes and Hero Worship, by Thomas Carlyle, 3216
Heroes of the Lighthouse, story, 6195
Heroine of Nottingham Castle, 6808
Heroine of the Southern Seas, story and picture, 5827
Heroine of the Storm, story, 6572
Heron, habits and distribution, 3869
common, night, and squacco, 3868
in colour, 2767
Hero of Alexandria, Greek scientist and mathematician, 2745
Hero of Kavala, story, 6685
Héroult, type of electric furnace, 1229
Herrera, Fernando de : see De Herrera
Herrick, Robert : see Poetry Index
Herring, movements of shoals, 5102
scales used to make imitation pearls, 4979
skeleton studied, 1565

- fishing industry, picture series, 5723-31 in colour, 5099
- Herring gull**, 3997
- in colour, 3022
- Herringbone stitch**, how to make, with picture, 2983
- Herrnskretschén**, Czechoslovakia, scene, 4565
- Herschel, Caroline**, English astronomer, 3814; portrait, 3611
- Herschel, Sir John**, English astronomer, 138, 3118, 3816
- pioneer of photography, 4749
- portraits, 3611, 4133
- Herschel, Sir William**, English astronomer, 3614
- finger-print identification, 6728
- his portrait, 3611
- portrait, with son, 4133
- Hertel, Albert**, his painting, Spaniards in America, 3879
- Hertel, Ernst**, his sculpture, Father's Consoler, 5254
- sculpture of Heinrich Heine, 5260
- Hertford**, capital of Hertfordshire, arms, in colour, 4990
- Hertford College**, Oxford, arms, in colour, 4988
- Hertfordshire**, south Midland county of England, places in, 7161
- road map, 7127
- Hertz, Heinrich**, German scientist, 2090, 3360
- his portrait, 3359
- Hertz, Henrik**, Danish poet and writer of plays, 4939
- Herve, Thomas K.**: see Poetry Index
- Herzegovina**, country now included in Yugoslavia, 4556
- Herzen, Alexander**, Russian revolutionary writer, 4817
- Hesoid**, early Greek poet, successor of Homer, 5181
- Hesione**, story, 6692
- Hesperia**, classical name for Italy and Spain, 3518
- Hesperides**, Garden of the, ancient Greek legend, 5331, 5244
- Hesperornis**, extinct flightless bird, 4004 its characteristics, 2636
- Hesperos**, evening star's old name, 3518
- Hesse**, Germany, timbered houses, 4434 map, in colour, 7087
- Hessian fly**, enemy of wheat, 6082
- Hestia**, Greek goddess, 3516
- Hevea**: see Para rubber
- Hever Castle**, Kent, 1593
- Hewlett, Maurice**, English novelist and poet, 3713
- Hexagon**, how to find area, 7075
- Hexham**, Northumberland, Saxon cross and seat of sanctuary, 725
- Hey, Diddle Diddle**, rhyme picture, 2829
- Heyse, Paul Johann Ludwig**, German writer, 4700
- Heywood, Thomas**: see Poetry Index
- Hezekiah**, Pool of, view, 3466
- Hiawatha**, story of Longfellow's poem, 4202
- Hibernation**, its origin, 1283
- Hickman, Henry Hill**, pioneer of scientific use of anaesthetics, 2507
- Hickory, Dickory, Dock**, rhyme, music, and picture, 6159
- Hickory nut**, native of America, 2066
- Hickson, William Edward**: see Poetry Index
- Hidalgo, Miguel**, Mexican patriot, 7004
- Hide-and-seek**, how to hide in the open country, 3474
- Hide and seek on the hearthrug**, game, 1372
- Hides**, British Empire and Commonwealth production, 2074
- See also Leather
- Hidesato**, the monster he slew, 6822
- Hideyoshi**, Japanese statesman and conqueror, 6618, 6624
- Hieroglyphics**, what are they? 5491, 6596, 6660
- See also Egypt
- Higgledy, piggedy**, rhyme picture, 230
- High brown fritillary**, with egg, caterpillar and chrysalis, in colour, 6208
- High Court of Justice**, three divisions described, 4775
- Highgate**, Coleridge died there, 2476
- Highland cattle**, characteristics, 1154 types, 1335, 1160
- Highland Mary**, with Robert Burns, 2223
- Highland terrier**, 667
- Highway Code**, issued by Ministry of Transport, 6837
- Hildebrand**, Pope, 1073-1085, under the name of Gregory VII, 6921
- Hill, Sir Rowland**, English postal reformer, 1585, 4626, 5459
- Hill, Thomas**, American landscape painter, 3287
- Hill**, how the hills were made, 641
- their influence on rain, 2867
- can a river run uphill? 6600
- why do the hills look blue at a distance? 1050
- why do we go slower uphill? 5245
- why do we want to run down? 6100
- our great and little hills, 461; pictures, 469-73
- Hillan**, Iraq, street scene, 6274
- Hilliard, Nicholas**, English miniature painter, 2049
- miniature painting by, 2049
- Hillmorton**, wireless aerials, 2095
- Hill-robin**, red-billed species, 3147
- Hillsborough**, Northern Ireland, scenes, 3072, 3073
- Hilversum**, Holland, picture, 5539
- Himalayan bear**, 787
- Himalayan fox**, 541
- Himalayas**, great mountain range in Central Asia, 518, 6500
- Mount Kinchinjunga**, 2247
- Hincks, Dr.**, work in deciphering cuneiform inscriptions, 6869
- Hind and Panther**, poem, 1810
- Hindenburg**, Field Marshal, President of German Republic, 4302
- Hindenburg**, German airship, 4452
- Hinds, Samuel**: see Poetry Index
- Hinduism**, religion explained, 2811
- religion of three-quarters of India's people, 2944
- veneration of banyan tree, 3051
- Hinnom, Valley of**, 3467
- Hiole, Ernest Eugène**, Arion on Dolphin, sculpture, 5259
- Hit-joint**, strength of socket, 1694
- diagram, 1692
- Hipparchus**, Greek astronomer, 3487
- Hipparchon**, ancestor of the horse, 1894
- fossil skull, 1879
- Hippocrates**, Greek physician, 2502, 3120
- what is the Oath of Hippocrates? 6603
- healing the sick, 2503
- Hippocrene**, sacred fountain in ancient Greece, 3530
- Hippolyta**, queen of the Amazons, in Midsummer Night's Dream, 6294
- Hippopotamus**, characteristics, 1659
- ancestors in ancient Britain, 1653
- baby hippopotamus eating, 1653
- full grown, 1655
- Hiram of Tyre**, tomb, 3468
- Hirohito**, Emperor of Japan, 6621
- Hiroshima**, Japanese city, atom bomb attack on, 1948
- Hirst of Witton**, Lord, a creator of industry, 4110; portrait, 4102
- Hissar cattle**, characteristics, 1154
- Hissarlik**, site of ancient Troy, 322, 6986
- Historians**, English, 3093
- Roman historians, 5428

HISTORY

The following are actual headings of the chapters in this group; the subjects dealt with will be found in their proper places in the index

Man Sets Out on a Journey, 45

Man Builds Himself a House, 167

Man Feels His Way to Power, 297

The Wondering Egyptian, 425

Man Begins to Think of God, 543

A New Birth for Mankind, 671

A Civilisation Wiped Out, 795

The Man Who Drew the First Map, 913

Pythagoras Makes a Guess, 1037

The Marvellous Man of Greece, 1181

How Two Men Divided Humanity, 1287

The Rise of Europe, 1405

Greatness that Came in Vain, 1535

The Greatest Event in History, 1665

An Empire Goes and an Empire Comes, 1785

Night Falls on Europe, 1905

The Ancient East, 2029

When the Whole Earth Feared, 2153

The Coming of Mohammed, 2277

The Roman Comes to Britain, 2397

Charlemagne, 2521

The Dawn of British History, 2643

Heroic Figures of the Dawn, 2775

Alfred, the Man of the Dawn, 2905

The Wind that Blew from the North, 3027

The Castle and the Jew, 3149

The Plundering Crusaders, 3267

The Days Before Shops, 3381

Feudalism and Chivalry, 3505

The Grave of Feudalism, 3637

The Value of the Common Man, 3757

The Great Journey, 3877

The Final Fight for Freedom, 4005

The Age of Expansion, 4125

The Eve of the Storm, 4255

Napoleon Goes Out, 4371

The Age of the Machine, 4499

Freedom Spreads Her Wings, 4621

The Hope of the World, 4747

A Picture Museum of History, 4859

birth of Jesus Christ greatest event in history, 1665

climate's effect on history, 2617

excavations that reveal world's early story, 8860

puzzle scenes, 3598, 3724

picture museum, 4859-64

See also names of Countries

Hitler, Adolf, German Nazi leader, 1941, 1943, 4302, 4303, 4304, 4373, 4624

Hitopadesa, what is it? 4391

Hittites, ancient empire, 6871

art dominated by Assyrian, 3902

god at Carchemish, 6872

Hive bee: see Bee

Hive beetle, in colour, 6336

Hoangho River: see Hwangho

Hoar frost, 2866; on plant, 4502

Hoarseness, why do we get hoarse when we have a cold? 2540

Hoary rag-wort, what it is like, 5265

flower, in colour, 5394

Hoatzin, bird of tropical America, 2636

habits and home, 4254

perching, 4247

Hobart, capital and port of Tasmania, 2576

view showing Mount Wellington, 2578

Hobbema Meyndert, Dutch landscape painter, 1426

Avenue at Middelharnis, 1423

Water Mill, painting, 3660

Hobbes, Thomas, English political and philosophical writer, 4842

portrait, 4837

Hobby hawk, 2628, 3627

in colour, 3022

Hochstetter Ice-falls, in Southern Alps of New Zealand, 2246

Hockey, how to play, with picture, 4709

Hodgson, Ralph, British poet, 4082: see also Poetry Index

Hodgson, William Noel: see Poetry Index

Hodie, Swiss painter, 3398

Hoe, Richard Marsh, portrait, 1517

his printing machine, 1515

Hoetger, German sculptor, 4896

Hofer, Andreas, Tirolese patriot, 894

monument at Innsbruck, 894, 4546

appointed governor of Tirol, 895

portrait, 889

with friends before execution, 895

Hoff, Van't: see Van't Hoff

Hoffmann, Heinrich, his painting, The Boy Jesus, 3594

Hofmann, A. W., aniline dyes found, 4472

Hofuf, town of Arabia, 8265

Hog: see Forest hog, Wart hog, and so on

Hogarth, William, English painter, 5891, 2050

portraits by him, 2051, 5695

The Artist's Servants, painting, 3535

Hog deer, teeth used for defence, 1404

Hogg, James, called the Ettrick Shepherd, Scottish writer of songs, 1266, 3954; portrait, 1261

See also Poetry Index

Hohe

Hohenlinden, battle of, victory of the French over the Austrians, 1454
 poem by Thomas Campbell, 1262, 3956
Hokkaido, or Yezo, Japanese island, 6617
Holbein, Hans, the Elder, father of the great Holbein, 1193
Death of Mary, painting, 1187
Holbein, Hans, the Younger, German painter, 1193, 6673
 influence on English portrait painters, 1925, 2049
 Matthew Arnold on his picture of a Labourer, 4255
 miniature work, 2049
 at house of Sir Thomas More, 6677

Pictures by Holbein

Boniface Auerbach, portrait, 1190
 Edward VI, portrait, 1079
 George Gisze, portrait, 1190
 Henry VIII, portrait, 1078
 Henry VIII embarks at Dover, 1074
 Madonna of Burgomaster Meyer, 1192
 portrait of a man, 1191, 3537
 portraits of himself, 1191, 6673
 Robert Cheseam, portrait, 1191
 Sir Thomas Godsalve and his son, 1190
 study of a child, 1189
Holberg, Baron Ludvig, Norwegian poet and author, 4938
 portrait, 4937
Holbrook of the Dardanelles, story, 6574
Holden, Charles, architect, London University designed by, 4228, 6612, 6605
 Arnos Grove Underground Station, designed by, 6613
Hölderlin, Johann Christian, German poet, 4698
Hoid fast, let go, game, 4468
Holdsworth, P. J., Australian poet, 4206
Hole, William S., his pictures, Bruce granting a Charter, 953
 Signing of the Covenant, 4007
Hole in the Wall, story, 5707
Holidays, right way of packing for the, 1625
Hollinshed's Chronicle, source of Shakespeare's English Historical Plays, 980
Holkham Hall, Norfolk, 6473
Holland, J. G.: see Poetry Index
Holland, Sir Thomas, British geologist, Continental Drift theory supported, 3037
Holland, or Netherlands, maritime kingdom of western Europe, 5523
 art: see Dutch art
 beauty of landscape, 1426
 colonies, 5531
 independence declared, 5528
 industrial rise, 5528
 Motley's history, 4336
 Protestant Reformation, 5527
 relations with Indonesia, 6480
 South Africa colonised, 3183
 Spain's domination, 1084, 3880
 Zuyder Zee reclamation, 5523

Pictures of Holland

air force insignia, in colour, 6980
 first village on reclaimed land, 5535
 flags, in colour, 6974
 mussel bed, 5731
 types of her people, 89, 5525, 5529
 typical scenes, 5522, 5533, 5536

Maps of Holland

general and political, 5534
 in colour, 7086
 showing historical events, 5535

See also Dutch East Indies and Netherlands Indies

Holland, Hook of: see Hook of Holland
Holly tree, description of, 4040
 berries, in colour, 3670
 tree, flowers, and leaves, 3545
Holly blue butterfly, with egg, caterpillar, and chrysalis, in colour, 6205
Hollyhock, of Mallow family, 2561
 flower, 6378
Hollywood, California, street scene, 3802
Holm, old name of holly, 4041
Holmby House, Charles I a prisoner, 522
Holmes, Sir Charles, English landscape painter, 2677

INDEX

Holmes, Oliver Wendell, American essayist, poet, and novelist, 4203, 4333
 See also Poetry Index
Holoderm, characteristics, 4496
Holstein cattle, Dutch origin, 1154
Holt, Thomas, English architect, 6240
Holtedahl, Olaf, found Payer's records in Nova Zembla, 6434
Holy Alliance (1815), between the Tsar, Emperor of Austria, and King of Prussia, 4622
Holy Family, The, Andrea del Sarto's group, 820
 Michael Angelo's paintings, 696
 Perugino's paintings, 825
 with shepherd, by Titian, 934

Pictures of the Holy Family

Giovanni Bellini's, 938
 Michael Angelo's, 691, 1662
 Murillo's, in colour, 1662
 Raphael's, 823
 with St. Catherine, by Titian, 939
 See also Mary, mother of Jesus
Holy fern, in colour, 1798
Holy Grail, quest by King Arthur's knights, 6942
 what was the Holy Grail? 3037
 painting, by Edwin Abbey, 6947
Holy Island, or Lindisfarne, island off the Northumberland coast, 342, 2778, 345
Holy Land: see Palestine
Holy Roman Empire, becomes Austrian Empire, 4624
 Charlemagne its real founder, 2524
 origin of name, 4292
Holy War, The, by Bunyan, 1479
Home, the making of one, 2525
 British home of 2000 years ago, 169
Homer, Greek poet, 770, 5179, 5303
 Iliad translated by Pope, 1611
 translations: see Poetry Index

Pictures of Homer

crowned by the Iliad and Odyssey, 5183
 Greek sculpture in his praise, 1039
 homage of the poets, 5183
 singing his lay, sculpture, 4656
 singing in Athens, 5183
Homer, Winslow, American genre and landscape painter, 3288

Pictures by Winslow Homer

harvest scene, 3290
 The Gulf Stream, 3293
 The North-Easter, 3291
 The Wreck, 3290
Home Guard, defence force formed during Second World War, 1941
Home Rule: see Ireland
Home Secretary, his duties, 4539
Home, Sweet Home, story of song, 1268
 John Howard Payne writing it, 1269
Homing Pigeon, flock, 4118
Hominy, made from maize, 1702
Homoptera, insect species, 5720
Homo Sapiens, who is Homo Sapiens? 2298
Homs, Syrian town, 6270
Honan, archaeological discoveries in, 6996

Honduras, Central American republic, 7007-8
 flags, in colour, 6973
 general and political map, 7030
 map, in colour, 7103
Honduras, British, Central American colony, 3553, 7008
 arms of the colony, in colour, 4985
 flags, in colour, 6967
 native washerwomen by river, 3561
 map, general, 7030; in colour, 7103
Honest Shepherd of the King, story, 5829
Honest Youth, story and picture, 4847
Honey, how bees make it, 5838
 when bees take honey from flowers do the flowers get a new supply? 1801
 bees making comb, 5835
Honey bee: see Bee
Honey-buzzard, its food, 3828, 3022
Honeycombing stitch, how to make, with picture, 5067
Honeycreeper, habits, 2896
Honey-eater, characteristics, 8020
Honey-guide, African bird, 3258
Honey-locust moth, caterpillar, in colour, 6209

Honey-pot ant, Mexican species, 5065
Honeysucker, Cardinal honeysucker, in colour, 3262
Honeysuckle, flower, 4284
 relations, 4781

Pictures of the Honeysuckle

blossom fertilised by hawk moth, in colour, 2045
 flower, 4778
 flower, in colour, 4287
 fruit, in colour, 3668
Honeywood, St. John: see Poetry Index
Hong Kong, British Chinese colony, comprising Hong Kong island and the Kowloon peninsula, 3425

Pictures of Hong Kong

harbour, 3419
 peak overlooking harbour, 3436
 proclaimed a British possession, 2079
Honolulu: see Hawaii
Honor Oak, water reservoir, 4510
Honshu, or Honshu, Japanese island, 6617, 6622
Hooch, Pieter de: see De Hooch
Hood, A. Acland, his picture, Job in Sorrow, 498
Hood, Thomas, English poet and humorist, 3956
 historical interest of The Song of the Shirt, 1584
 portrait, 3953
 See also Poetry Index
Hooded crow, in colour, 3021
Hooded merganser, bird, 3753
Hooigli, mouth of the Ganges on which Calcutta stands, 2810; Jubilee Bridge, 555
Hook, James Clarke, English marine painter, 2545
Hooke, Robert, English scientist and microscopist, 1883, 1885
Hooked citheronia, caterpillar of moth, in colour, 6209
Hooked Herb bennet, seeds, 946
Hooker, Sir Joseph, rubber tree sent to India from Kew, 1188
Hookeria, shining, flowerless plant, 3408
Hook of Holland, Dutch cape, 5023
Hoopoe, bird, habits, and distribution, 3265, 3257
 in colour, 2898
Hoori the Fisherman, story and picture, 4357
Hoover, Herbert C., American President, 3798
Hoover Dam, Boulder Canyon, Colorado, pictures, 5605, 5975
Hop, member of genus Humulus, 6496
 relation of elm, 3786
 relation of stinging nettle, 4283
 fruit, in colour, 3666
 seeds falling, 947
Hope, Anthony: see Hawkins, A. H.
Hope, vast importance of, 2105
 G. F. Watts's painting, 2546, 2107
Hopeh, Chinese province, 6502
Hop kiln, why has it a movable top? 5491
Hopkins, Sir Frederick, vitamins discovered by, 6353
Hopkins, Gerard Manley, English poet, 4083
Hoplia, beetle, in colour, 6336
Hop-o'-my-thumb, story and picture, 5089
Hopper, insect, eared and scarlet hoppers, in colour, 5714
Hoppner, John, English portrait painter, 2176

Pictures by John Hoppner

Countess of Oxford, in colour, 2178
 George IV, portrait, 2060
 Mrs. Jordan, portrait, 2056
 The Sackville Children, 2058
Hopsonn, Admiral, how he seized the French flag, 5536
Horace, Roman lyric poet and satirist, 5430
 on Rome's degeneration, 1538
 portrait, 5425
 with Virgil in Rome, 5429
Horatii, Roman champions, 4795
Horehound, in colour, 5142, 5144

Horham, Essex, Horham Hall, 1086
 Horizon, what is meant by, 6719
 Horley, Surrey, 1589
 Hormones, what they are, 3176
 Horn, Prince, story, 1150
 Hornbeam, uses of its timber, 3786
 tree, leaves, and flowers, 3912
 Hornbill, bird family, 3265
 elate hornbill, 3254
 various species, 3255
 Horn-combed corymbites, beetle, in colour, 6335
 Horne, Richard Hengist: see Poetry Index
 Horned iguana, reptile, 4493
 Horned parakeet, in colour, 3141
 Horned tragopan, bird, 4251
 Horned viper, 4617
 Hornel, E. A., his paintings
 Listening in the Wood, 3301
 Springtime, 3459; Summer, 6197
 Horner, W. G., invented zoetrope, 6703
 Hornet, largest British wasp, 5842
 drone, queen, and worker, 5839
 in colour, 5714
 Hornet fly, species, in colour, 5714
 Horn of plenty, edible fungus, 3411
 Hornstone, form of quartz, 1304
 Horrocks, Jeremiah, English astronomer, 3812
 Horsa, Jute leader, 592
 Horse, great animal family, 1893
 descended from hipparion, 1879
 flint stone powder as medicine, 302
 hints for young riders, 6925
 instincts, 3586
 Leonardo's book about the horse, 6183
 plague of bot-flies, 6088
 speed of a racehorse, 6852
 their ancestors, 1756, 1894
 how is the horse measured? 1416
 why does a horse need shoes? 3396
 why does a horse wear blinkers? 3652

Pictures of the Horse

Algerian horsemen, painting, 1904
 Arab soldiers on horseback, 1901
 chariot race in ancient Rome, 1907
 Clydesdale, 1892
 drawing chariot, sculpture, 5130
 drawing hay-cart, painting, 1904
 English shire horse, 1892
 exercising horses in old Thrace, 1902
 falcon hunting scene, 1903
 Hackney filly, 1892
 harvest field scene, 1893
 head, Greek sculpture, 5011
 Horses in a Stable, by Morland, 2555
 Mares and Foals, painting by Sir A. J. Munnings, 2675
 mare with foal, 1903
 Mongolian wild horse, 1897
 New Forest ponies, 1892
 part of hood under microscope, 1910
 pony working in salt mine, 1543
 primitive drawing, 193
 racehorse, 1892
 Red Indians on the watch, 1902
 sculpture of fifth century B.C., 4031
 Shetland pony, 1895
 team of Percheron horses, 1901
 Two Friends, sculpture by V. Peter, 5009
 Wagon and Team, painting by Rosa Bonheur, 3656
 Horse and the Ass, fable, 3744
 Horse beadlet anemone, in colour, 1555, 1556
 Horse bot-fly, 6082
 Horse chestnut, where it grows, 4037
 fruit, in colour, 3672
 with flowers and leaves, 4151
 Horse-fly, in colour, 5714
 Horse forlane, heraldic charge, 927
 Horse latitudes, what are they? 5493
 Horse mint, what it is like, 5892
 flower, in colour, 6127
 Horse mussel, shell, 1177
 Horsens, seaport of Denmark, 5149
 Horse power, definition, 7071
 of lightning flash, 238
 what does horse power mean? 1922
 Horseradish, care needed in identifying root, 2442
 Horse-shoe, electronic device in making of, 2718
 Horsetail, belonging to the pteridophytes, 3412

spores, with spirals, 947
 varieties of flowerless plant, 3408
 Horsley, Sir Victor, English surgeon, 2828; portrait, 2623
 Hortensio, Shakespearian character in The Taming of the Shrew, 6044
 Horthy, Admiral, Regent of Hungary (1920-26), 4551
 Horus, Egyptian god, 428
 Hospital, X-ray apparatus in use, 2593
 Hot Springs Conference, 3800, 6484
 Hottentots, a South African race, 3184
 Robert Moffat goes among them, 3002
 Houdan fowl, 4253
 Houdon, Jean, French sculptor, 4646
 busts made on eve of Revolution, 4646
 sculpture of Benjamin Franklin, 4646
 Molière, sculpture, 4651
 Houghton, Lord: see Poetry Index
 Houghton, mansion built for Sir Robert Walpole, 6470, 6475
 Hound: see Dog
 Hound at the Gate, story, 5469
 Hound's-tongue, plant, 5023
 flower, in colour, 5144
 Hour, has the day always been divided into 24 equal hours? 2296
 restriction of working hours by law, 6255
 early time-telling instruments, with pictures, 2297
 Hours, mythological goddesses of the seasons, 3517
 painting by Arthur Hacker, 3523
 House, building a house on a hill-top; materials used, 2525
 built of salt, 2375
 fresh air should have free entry, 693
 railway's effect on housing, 5640
 where was the first house built in stone? 3165
 why does it become dusty? 6467
 why do houses seem crooked when we look across a fire? 4761
 building a house, series, 2525-37
 country houses, 6607
 primitive dwellings, 3769-70
 uses of electricity, 1354
 See also Building
 House ant, queen, 5961
 House cricket, in colour, 5713
 House-finch, bird, in colour, 3264
 House-fly, a constant danger, 6086
 breathing apparatus and foot under microscope, 1916
 full-grown insect magnified; its grubs and pupae, 6087
 in colour, 5714
 life-story, 6455
 tongue, under microscope, 1913
 House martin, characteristics, 3145
 in colour, 3024
 House mouse: see Mouse
 House of Commons, candles for lighting, 3648
 methods of procedure, 4528
 the Speaker's duties, 2300
 what is the prayer of the House of Commons? 4516
 interior, 2136
 See also Member of Parliament
 House of Lords, Appeal Court, 4775
 attempts to reduce power, 1706, 4537
 Black Rod, 5490
 chairman is the Lord Chancellor, 2300
 its members and functions, 4536
 House paper-chase, game, 2118
 Houses of Parliament, architecture, 4228, 6472
 views, 1221, 2723, 4535
 See also House of Commons; House of Lords; Parliament
 House sparrow: see Sparrow
 House spider, 5593
 under microscope, 1914
 House that Jack Built, nursery rhyme picture, 354-5
 Housman, Alfred, English poet, 4081
 Housman, Laurence, English poet and scholar; hymns written by, 1760
 Hover-fly, larvae eat green-flies, 6089
 just out of chrysalis, 6082
 with grub, 6082
 How, W. Walsham, bishop, English writer of hymns; portrait, 1759
 See also Poetry Index
 How Alban gave up his Life, story, 2511

Howard, Catherine, fifth wife of Henry VIII, 1076
 Howard, Ebenezer, help in experimental Garden Cities, 6609
 Howard, John, English prison reformer, 1582, 3980, 5450
 among prisoners, 5453
 How Arshad Served his Master, story, 5952
 How a Sultan Found an Honest Man, story, 36
 How Chulain Crossed the Bridge, story, 5585
 Howden Abbey, Yorkshire, 964
 Howe, Elias, American inventor, 5946, 5939
 Howe, Julia Ward, American poet, 4204
 See also Poetry Index
 Howells, William Dean, American novelist and poet, 4333
 How every Wise Child Should Live, picture to poem, 474
 How Gotham Got a Bad Name, story, 662
 How Highlander Chose His Wife, story, 6683
 Howick Falls, on Umgeni River, Natal, 2227
 Howitt, Mary: see Poetry Index
 Howleglass stories: see Stories
 How Margaret Wilson gave up her Life, story, 3012
 How Mr. Cat became King, story, 411
 How Music made Peace, story, 4964
 How Rabbit made his Fortune, story, 3989
 How Rinaldo Conquered Bayard, story, 6818
 How Rindar Brought the Reindeer Home, story and picture, 3010
 How Roland Got His Coat-of-Arms, story, 6817
 How Rustem Met His Son, story and picture, 5092
 How the Children Saved the Town, story, 6569
 How the Moon Came to Hawaii, story and picture, 6807
 How the Peacock came into the World, story, 4484
 How the Sea became Salt, story, 5091
 How the Thief was Found Out, story, 415
 How the Train was Saved, story, 6820
 How the Wren became King, story, 1890
 How they Brought the Good News, Browning's poem, 3458; picture to poem, 3437
 How they Crossed the River, story, 3370
 How, when, and where? game, 1372
 Hsinking: see Changchun
 Hubbard, Elbert, his story, A Message to Garcia, 6949
 Hubert, in Shakespeare's play King John, 6290
 Huckleberry: see Blackberry
 Huddersfield, town in the West Riding of Yorkshire, arms, in colour, 4990
 Hudson, Henry, English navigator, fate of, 2318
 his voyages, 5212
 perished in Hudson Bay, 776, 1020
 flag, in colour, 6971
 last voyage, 5287
 portrait, 4597
 Hudson, Thomas, Reynolds's art master, 5698
 Hudson, William Henry, writer on natural history, 2970, 3829; portrait, 3827
 Hudson Bay, Canada, 2191
 Hudson River, New York State, U.S.A., Henry Hudson explores it, 5212
 George Washington bridge, 554
 Hudson's Bay Company, formation, 2318
 Hué, town of Indo-China, 6513
 Huelva, Spain, pottery workers of, 5273
 Huggins, Sir William, English astronomer, 3616; portrait, 3611
 Hughes, David Edward, English electrician, 3362
 his carbon microphone, 1844
 his type-printing telegraph, 1846
 listening to wireless in street, 3361
 portrait, 1843

Hugo, St., picture by Zurbaran, 1311
Hugo, Victor Marie, French poet, novelist, and writer of plays, 2015, 4457
stories told to his grandchildren, 2015
portrait, 4453
sitting with his grandchildren, 2015

See also Poetry Index

Huia, bird, characteristics, 2771
male specimen, 2773
Hull, port of Yorkshire, arms, in colour, 4990
Hull, Albert Wallace, his work on X-ray crystal-analysis, 2594
Hull, Professor Edward, on age of South Wales coalfields, 2834
Hulls, Jonathan, English inventor, 3733
Human body, skeleton is the scaffold on which it is built, 1565
adaptation to altered conditions of breathing at great heights, 5199
atmospheric pressure enables us to breathe, 5197
carbon dioxide: how it is made, and how it is got rid of, 1062
cerebellum controls movements and balance, 2801
digestion of food, 2181
evolution's work, 3585
harmonious working of parts, 6375
light beneficial, 1429
lives by the food absorbed, not by the food eaten, 2064
making of the body, 451
muscles carry out orders, 1809
symmetry of framework, 1566
temperature regulated by sweat glands, 1432
the stomach, how it works, 2061
water makes up three-fourths, 326
water needed, and why, 1432
white blood cells, its scavengers, 1060
is the body wearing away? 5247
where does our warmth come from? 5128
why have we bones? 5004

See also under the various parts:
Bone, Muscle, Heart, and so on
Humanism, explanation of word, 6107
Humanity, Religion of, teaching during the French Revolution, 4501
Human Understanding, John Locke's famous essay, 4844
Humber Conservancy, flag, in colour, 6966
Humble-bee, insect family, 5841
New Zealand's consignment from England, 5710

Pictures of the Humble Bee

cocoons in nest, 5834
entrance of nest, 5834
foxglove fertilised by, in colour, 2046
parasite under microscope, 1912
psithyrus humble-bees, 5843
queen worker and drone, 5839
Humble-bee fly, 6089
Humboldt, Alexander von Baron, German traveller, naturalist, and scientific writer, 5578, 6467, 5569
on the 104th Psalm, 2110
watching display of meteors, 3606
Humboldt Current, South American climate affected, 7006
Hume, Alexander Hamilton, Australian explorer, 6086
Hume, David, Scottish historian and philosopher, 2969
Hume, Grizel, story, 5217
Humidifier, apparatus for scientifically ventilating buildings, 6853
Humidity, what is meant by, 6721
Humming-bird, family of, 3259
flowers fertilised, 832
two tropical varieties, 3254
Humming-bird hawk moth, and caterpillar, in colour, facing 5935
fertilising honeysuckle, in colour, 2045
Humpback whale, 2147
Hunan, Chinese province, 6502
main street of Shaoyang in, 6498
Hundred Thousand Monkeys, story and picture, 4963
Hundred Years' War, between England and France (1336 to 1431), 952, 3920
Hungary, central European country, 4550

self-government gained, 898
flag, in colour, 6973
peasant types, 4566
railway engine, 3511
scenes in Hungary, 4561

Maps of Hungary

in colour, 7090
physical features, 4557
Hunger, what makes us hungry? 680
why do we not growl when hungry? 2920
Hungry Fox and the Kitten, story, 154
Hunian sheep, rams kept for fighting, in India, 1285
Huns, over-run Europe in the Dark Ages, 2153
route through Germany, 4310
Teuton's hatred of them, 2944
bishop appealing to them, 2155
charging in battle, 2153
marching on Paris, 2154
Hunstein's Bird of Paradise, in colour, 3264
Hunt, Leigh, English essayist and poet, 1585, 2600, 2970
portrait, 2969
See also Poetry Index
Hunt, Walter, American inventor, sewing-machine ideas, 5946
Hunt, William Holman, English painter, 2548
his paintings, Hireling Shepherd, 2552
Jesus in the Temple, 3588
Hunt, William Morris, American painter, 3287
his paintings, Flight of Night, 3293
Girl reading, 3295
Hunter, John, Scottish surgeon, 2506, 5575
portrait, 2501
Hunter, William, surgeon, 2506
Hunting dog, Cape, 536
Huntingdon, capital of Huntingdonshire, market-place and church, 7135
Huntingdonshire, south-eastern county of England, places in, 7161
road map, 7135
Huntsman, Benjamin, crucibles invented for making of steel, 50
Hunt the ring, game, 4468
Hunt the slipper, game, 4468
Hunyadi, John, Hungarian soldier and ruler, 4547, 6132
Hupeh, Chinese province, 6501, 6502
Hur, accompanied Moses, 1246
Huron, Lake, one of the Great Lakes of North America, 2494
steamer in Georgian Bay, 2497
Hush-a-By Baby, and picture, 4185
Huskies, Arctic dog breed, does not bark, 5366
Huss, John, Bohemian religious reformer, 3760, 4552, 7054
portrait, 3759
Hussain, King of Hejaz, 6262
Hutchinson, Mrs., heroism during siege of Nottingham Castle, 6808
Hutia cougar, rodent, 1036
Huxley, Thomas Henry, English biologist and scientific author, 3830
Huygens, Christian, Dutch astronomer, 3613
theory about light, 5690
Hwangho, or Yellow River, China, 6501
rises in Tibet, 6512
Hyacinth, 6383-4
wild, or Bluebell, 4780; in colour, 4905
Hyacinth (mineral), form of zircon, 1301
Hyacinthine macaw, bird, 3499
Hyades, stars in mythology, 3518
Hybrid delphinium, flower, 6378
Hyde, Anne, wife of James II, 2133
Hyde, Edward, Lord Clarendon, English statesman and historian, 2133
his History of the Great Rebellion, 3093
his verdict on Cromwell, 523, 3094
Hyde Park, scene in, 1220
Hyde Park Corner, fine gate built by Decimus Burton, 1216
Hyderabad, India, scene, 2950
Hydratuba, under microscope, 1914
Hydraulic dredger, removing gravel from river bed, 2917
Hydraulic lift, 4880
Hydraulic press, 6351
Hydraulic ram, 6351

Hydrautomat, what it is, 6601
Hydro-carbon, the three best known forms, 4348
petroleum composed of, 2961
petroleum-refining uses of, 2966
Hydrochloric acid, composition, 4346
food in stomach digested by its aid, 2082
Hydrogen, atom's size and weight, 4100, 4251
boiling point, 4998
discovered by Henry Cavendish, 19
essential to protoplasm, 830
glowing under the spectroscope, 3850
heavenly bodies contain it, 12, 3116, 3974
how to make it, 6424
ions, use in electricity, 2718
specific heat, 5567
use in balloons, 20, 4445, 4954
water formed by combination with oxygen, 3332, 4346
weight of a cubic foot, 7074
Hydrogen sulphide, sulphuretted hydrogen, 3335, 5615
Hydrophobia, Pasteur's cure, 2624
mad wolves that attacked a camp, 540
Hydrozoon, under microscope, 1912, 1915
Hyena, characteristics and home, 420
rhinoceros killed by pack, 1776
striped hyena, 422
Hyet, meaning of, 6721
Hygieia, goddess of health, 3520
Hylas and the Nymphs, fine painting by J. W. Waterhouse, 3522
Hymen, god of marriage, 3520
Hymenoptera, insect family, 5841
Hymn, writers of the hymns, 1757
tune called Austria, by Haydn, 146
Hyperion, classical demi-god, 3518
Hyperion, poem by Keats, 2600
Hypnos, or Somnus, god of sleep, 3520
Greek statue, 4274
Hypnotism, work of Nancy schools, 4282
suggestion and hypnotism, 4281
Hypobithus, sea squirt, 5346
picture, 5347
Hyracotherium, ancestor of horse, 1894
picture of, 1753
Hyrax, animal, family, 2021
picture, 2027

Iago, character in Shakespeare's play Othello, 6165
l'Anson, Frances, the real Lass of Richmond Hill, 1265
Ibadan, largest city in Southern Nigeria, 3317
Ibáñez, Vicente Blasco, Spanish novelist, 5059; portrait, 5055
Iberians, ancient people of Spain, 5272
Ibex, characteristics and home, 1286
picture, 1282
Ibis, characteristics, 3872
sand ibis, 3868
various kinds, in colour, 3263-4
Ibn Batuta, Arabian traveller and explorer in Asia, 772
Ibsen, Henrik, Norwegian dramatist and poet, 4940, 5157; portrait, 4937
Icarian Sea, origin of name, 6939
Icarus, story, 3648, 6939
Ice, bulk greater than the water from which it has formed, 2172
coldness varies, 5318
crystals, 1047, 2866
crystals cause of haloes round Sun, 3166
effect on Earth's surface, 642
formation due to slow motion of molecules, 5318
melting prevented by a blanket, 800
shrinks below certain temperature, 2541
specific gravity, 4954
thickness necessary for supporting different weights: see strength of ice, 7070
weight of a cubic foot: see weight of materials, 7074
Wonder Questions
can a plant grow under ice? 3280
do we get a pound of ice from a pound of water? 2920
why does a piece of ice make a drink colder? 3890
why is ice slippery? 3164
cutting ice on Canadian lake, 2193

grotto on Jungfrau, 4671
southern limit of pack ice in Old World, 5906

Ice Age : see Glacial Age

Iceberg, depth in water seven times its height above it, 2538

why does an iceberg float? 2541

off Newfoundland coast, 2619

three great icebergs, 2538

Iceland, large North Atlantic island Republic, 5149

language and literature, 4937

volcanic eruptions, 518

flags, in colour, 6973

milkmaid, 5168

map, in colour, 7100

map of animal life of the country, 5166

map of industries, physical features, and plant life, 5167

Iceland moss, of Lichen family, 702

Icen, ancient British tribe, 890

Ices, how to make them without a freezer, 2608

Ice-sailing, what it is, 3278

Ichneumon: see Mongoose

Ichneumon fly, or wasp, destroys many insects, 38, 5722, 5842

life-story, 6453

picture of, 5843

specimens, in colour, 5714

Ichthyornis, prehistoric bird, characteristics, 2838

Ichthyosaurus, prehistoric reptile, 644, 1383, 1508

discovered at Lyme Regis, 1509

fossil remains, 1383

how it became a fossil, 644, 645

Icicle, stalactite, compared with, 6845

icicles on fountain, 4502

Itcinike the Boaster, story, 4974

Itcinus, Greek architect of the fifth century B.C., chief designer of the Parthenon at Athens, 4144

Idaho, American north-western State, logs on St. Maries River, 5358

State flag, in colour, 6971

IDEAS

The following are actual headings of the chapters in this group; the subjects dealt with will be found in their proper places in the index

Movement, 113	Nature, 2225
Justice, 243	Duty, 2351
Courage, 371	Peace, 2477
Truth, 493	Patience, 2801
Direction, 617	Authority, 2723
Distance, 743	Success, 2851
Space, 861	Knowledge, 2973
Number, 985	Prayer, 3097
Faith, 1109	Gratitude, 3221
Eternity, 1235	Patriotism, 3341
Vision, 1359	Optimism, 3459
Beauty, 1483	Instinct, 3585
Energy, 1613	Imagination, 3715
Virtue, 1733	Liberalism, 3833
Prudence, 1853	Inspiration, 3957
Providence, 1981	Immortality, 4085
Hope, 2105	Liberty, 4207

Charity, 4337

Idea, what they were, 4761

Idiot, origin and meaning of word, 6373

Idmon, father of Arachne, 6738

Idocrase, or Vesuvianite, mineral, 1304

Idol and the Whale, story, 410

Idrac, Antonin, his sculpture, Mercury adopts his Wand, 5258

Iduna and the Golden Apples, story and picture, 2887

Idylls of the King, Tennyson's poem, 368, 3338, 3340

If no one ever marries me, picture to poem, 479

Igarka, port of Russia, 6024

Ightham, Kent, example of early English manor house, 6233, 844

Iglou, what is it? 5616

Igneous rocks, what they are, 4639

Iguana, characteristics, 4495

various species, 4493

Iguanodon, discovery, 1636

fossil remains, 1635

picture, in colour, facing 1505

I had a little nut-tree, nursery rhyme, picture and music, 969

Ildico, Attila's bride, 2156

Ilex oak, what it is like, 3785

Ilfracombe, watering-place in North Devon, view, 1714

Ili, town in Sinkiang, 6510

Iliad, The, story of Homer's poem, 5303

Helen on walls of Troy, 5305

Ilion or Ilium, ruins of walls, 6991

See also Troy

Illinois, American State, flag, in colour, 6970

Illness, why are so many people always ill at sea? 5002

why are there some illnesses that we cannot get twice? 4758

Ilth, what the word means, 2679

Illumination, the wonderful art that died when printing was invented, 450, 1051, 1923

bat and ball game of 14th century, 1923

David playing the harp, 1925

fourteenth-century example, 1925

Life of Jesus, in colour, 3961-4

various examples, in colour, 489-92

I love little pussy, nursery rhyme picture, 356

I love my love, game, 1372

Il Penseroso, poem by Milton, 1232

Ilse, German mythical princess, 4422

Imagination, what it is, 3715

symbolical picture, 3715

Imitation, part played in life, 4282

Imitation of Christ, The, book of devotion by Thomas à Kempis, 1389

Immaculate Conception, The, Murillo's painting at Madrid, 1312

Immortality, greatest of all human ideas, 4085

Impatiens noli-me-tangere, Latin name of balsam, 945

Imperial anemone, different kinds, in colour, 1553, 1554

Imperial Chemical Industries, founded by Lord Melchett, 4105

I.C.I. building at Millbank, 4230

Imperial eagle, distribution and characteristics, 3631; picture, 3633

Impost, what we mean by, 6128

Impressionism: see French art

Ina, merchant law of, 3382

Incandescent lamp, Edison invents, 5948

Incas, American-Indian race of Peru, 1533, 7001

masonry at Cuzco, 7014

Incese-holder, Florentine, 71

Inch, Loch, Scotland, 1335

Inclined plane, 6349

Inclinometer, in aeroplane, 4692

Income Tax, what it is, 4659

restrictive effect of high taxes, 5757

Incorporated Law Society's examination, 4777

India, sub-continent of two Dominions, 2809

story from ancient times, 2943

Akbar's rule (1542-1605), 4125

animals that inhabit it, 418, 419, 420

archaeological discoveries, 6995

British rule, 1328, 2076, 2945

Buddhism, 2032

Calcutta, former capital, 2810

communications, 2947

discovery by Portuguese, 4125

First World War, help, 1826

Forestry Service, 2947

forests destroyed, 3543, 5350

French influence destroyed, 1328, 2946

languages spoken, 2072

literature, 4206, 5674

part in World Wars, 2948, 1826, 1944

poets, 4206

population, 2041, 6003

products and exports, 2074

racism of ancient origin, 2072, 2282

rainfall, area of heaviest, 2621

religions, 2811, 4091, 5077

Second World War, help, 1944

self-government, 1944, 2943

snakes cause many deaths, 4490

stories of India: see Stories

trade rivalry between France and England in early days, 2945

Pictures of India

Agra, street scene, 2951

alligators on shores of lake, 2956

Amritsar, Golden Temple, 2953

boys at school in Amritsar, 2954

buffaloes swimming, 2956

bullock team in Madras, 2956

Buspa Valley, 2949

camel cart in Rajputana, 2956

carved temple, 76

cement mill worked by oxen, 1153

clouds that bring monsoon, 2743

dancing girl, 2954

elephants, 2023, 2956

farmer with ox-cart, 1153

flags, in colour, 6968

girl of western India, 2954

Government buildings, Delhi, 2951, 6614

Gwalior, fort and palace, 2951

Hardinge Bridge, over the Ganges, 555

Hindu temple, Delhi, 2955

Hindu washerman, 2954

Hyderabad, street scene, 2950

irrigation methods, 5970-71

Jaipur market-place, 2950

Jubilee Bridge, over Hoogli, 555

Jumma Musjid Mosque, Ahmedabad 2279

Kashmir, river boats, 2955

Lahore, bazaar, 2950

Madras, harbour, 2950

Madura, temples, 2815, 2953

Mahratta mother and child, 2954

moth caterpillars, in colour, 6209-10

Mount Abu, Jain temple, 2952-3

native types, 2314, 2954

New Delhi, 2949

Patan, street scene, 2951

Pearl Mosque, Delhi, 2279

Pondicherry, general view, 2950

postman, 4636

railway engine of, 3510

Simla, general view, 2950

snake charmer, 2954

Srinagar, capital of Kashmir, 2951

state barges on Ganges, 2499

Sukkur Dam on the Indus, 5971

Taj Mahal near Agra, 2815, 2955

temples in different cities, 5081-84

tomb of Huthi Singh, 2952

Udaipur, temple, 2955

Umnabad, temple, 2955

Maps of India

at time of independence, 2811

general and political, 2812

in colour, 7095

palaces, temples, and monuments, 2820-21

physical features, 2818-19

showing historical events, 2822-23

See also Pakistan and names of places

India House, Aldwych, London, 6614

Indiana, American State, flag, in colour, 6970

Indian adjutant, bird, 3868

Indian architecture, its rise out of the varied religions of the people, 5624

architecture of various buildings, 5625.

5633, 5634, 5636

Indian art, embroidery, 6739

native carving in wood and ivory, 6732

Indian black-naped flycatcher, bird, in colour, 3264

Indian brush-tail porcupine, 1032

Indian corn: see Maize

Indian fairy blue bird, in colour, 3262

Indian fig tree: see Banyan tree and Prickly pear

Indian game fowl, bird, 4253

Indian ink, how it is made, 4894

Indian kite, bird, 3627

Indian lantern-fly, 5719

Indian Mutiny, 1588, 2947

defence of Lucknow, poem by Tennyson, with picture, 4787

Indian nightingale, 3017

Indian Ocean, depths, 2413

Indian Python, 4619

Indian rhinoceros, 1771, 1775

Indian rubber, origin of name, 1165

tree related to fig, 1936

tree growing in Ceylon, 2565

See also Rubber

Indian runner duck, bird, 3752

Indians, South American tribes, and their habits, 6999, 7001

what is the Red Indian's pipe of peace? 5373

Indian telegraph plant, 586

Indian wolf, 541

Indicated horse-power, what it is, 1922
 Indigo, plant, dye from, 2939
 Indigo bunting, plumage, 2904
 Indirect taxes, how levied, 4859-60
 Indo-China, Federation of, 6512
 French possessions in, 4049
 flag, in colour, 6972
 map, in colour, 7097
 reliefs on walls of Angkor Thom, 6993
 Royal Palace, Phnom-Penh, 6516
 street in Hanoi, 6516
 Temple of Angkor Vat, 6517
 Indo-European languages, 563
 Indonesia, republic of the East Indies, 5532
 and Security Council of Uno, 6480
 map, in colour, 7097
 Induction coil, electrical apparatus for producing currents by induction, 978, 1846
 in wireless transmitting stations, 2091
 Indus, river of northern India, 2810
 rises in Tibet, 6512
 course on map, 2818
 Industrial Revolution, 4499
 inventions which caused it, 5884
 Industrial welfare, 6124
 Industry, co-operation, 6124
 climatic influences, 2622
 creators of British industry, 4103
 division of labour, 5016
 plants which aid it, 2937
 painting by Paul Veronese, 278
 Infant: see Baby
 Infamy, must all things end? 6969
 Inflammation, how to treat, 6175
 In Flanders Fields, poem of the First World War, by Joel McCrae, 4205
 Inflorescence, different kinds, 6495
 Infra-red rays, photographs through fog, 4756
 Infusoria, animal organisms, 6956
 Ingeborg, Princess, story of, 2143
 Ingelwong, Jean: see Poetry Index
 Ingfield, Sir Edward Augustus, English Arctic explorer, 6432, 6431
 Ingoldsby Legends, by R. H. Barham, 3956
 Ingot, what it is, 3272
 Ingres, Jean, French painter, 1804
 stained-glass windows designed, 6731

Pictures by Ingres

Poets' homage to Homer, 5183
 portrait of himself, 3536
 portrait of M. Bertin, 1805
 Virgin with Sacrament, 1662
 Inishmaan, village in Aran Islands, 3069
 Initials, game, 255
 Injector steam pipe, in engine, 3947
 Ink, ancient Egyptians made it, 2034
 coloured by salts of iron, 1416
 gall used to make it, 1294
 how it is made, 4894
 how to prepare invisible ink, 2485
 red ink, made from hazelwood, 2940
 how does rubber rub it out? 881
 why does blotting-paper absorb it? 560
 why is it that ink stains? 1416
 Inkerman, battle of, 3984
 Inkly mushrooms, edible fungus, 3411
 In Memoriam, story of poem, 6909
 writing and date of publication, 3338
 Inn, tributary of the Danube, 4666
 Inner Temple, 4777
 Inness, George, American painter, 3287
 Innocence, painting by Greuze, 1688
 Innocent III, Pope, his policy, 6922
 Innocent X, Pope, portrait by Velasquez, 1316
 Innsbruck, capital of the Austrian Tirol, 4546, 4549
 tomb of Emperor Maximilian I, 6740
 street scene, 4558
 Inonu, Ismet, president of Turkey, 6137
 Inquisition, tribunal set up in 1232 to examine and punish heretics, 1388
 Galileo imprisoned, 3612
 Netherlands' sufferings, 5527
 Spain adopts it, 1389, 5274
 Galileo on trial, 3609
 scene during Spanish Inquisition, 493
 Insect, its story, 5709
 how long do insects live? 6229
 how they harm and help us, 6449
 backboneless, 451
 earliest forms, 1257, 1508

facets on eyes, 5001
 food of some plants, 82, 204, 586
 increase, checked chiefly by birds, 6854
 pests, 3177, 6090, 6461
 plant fertilisation, 832, 2044

Pictures of Insects

pests, 6449, 6454, 6455, 6457, 6461
 plant fertilisation, in colour, 2045-48
 plant that eats them, 578
 series, in colour, 5713-14
 useful insects, 6453, 6456, 6461
 various species, 5719, 5721
 map of insects of world, 220

See also under separate names
 Insectivora, characteristics, 294
 Insolation, what is meant by, 6721
 Inspiration, meaning of, 3957
 Instinct, its meaning, 3555
 in animals, 1184, 5123
 in human beings, 680, 1879
 Insulin, diabetes cure described, 3176
 Insurance, National, 6256
 Intellect, character not made by, 4279
 mind made up of more than, 4034
 Interdict, in reign of King John, 835
 Interest, what it is, 5638
 Internal combustion engine, Daimler's first inventions, 4319
 as applied to motor-cars, 4319
 what is it? 5862
 International Court of Justice, 6478, 6482
 International Labour Organisation, 6487
 International Law, 5531
 International Trade Charter, signed by sixty nations, 6484
 Interrupted club-moss, plant, 3408
 In the Strange House, story picture, 533
 Intra-molecular, what is meant by, 1317
 Invalids, Paris, 4166
 Interior of church, 6356
 Napoleon's tomb, 1457, 4172
 Invention, capital's share, 5139
 mathematics used in its service by Archimedes, 1290
 modern wealth due to inventions, 5137
 Invention of Medicine, story, 6954
 Inventions and Discoveries, 7062-65
 Inventors, their story, 5939
 word and reward in industry, 5638-4103

Inverloch Castle, Scotland, 1335
 Inverness, capital and port of Inverness-shire, castle, view showing bridge, 1338
 cathedral, 1337
 Invertebrate animals, 451, 1565, 3662, 453
 Invisible pilot, what is it? 5126
 Io, classical story, 4481
 Iodine, made from seaweed, 3410, 4348
 Iodoform, what it is, 4348
 Ion, what it is, 483, 2718
 Iona, islet of the Inner Hebrides, 2777
 cathedral, 348
 St. Martin's Cross and ruins, 725
 Ionian Islands, cession to Greece, 5780
 Ionic art, blending with Doric art produces Golden Age of Greece, 4024, 4138
 Ionic column, characteristics, 5497
 illustration, 5497
 Ionosphere, electricity-conducting portions of atmosphere, 6318
 Iowa, American State, flag, in colour, 6970
 Ipêcacuanha, root as medicine, 2684
 plant, in colour, 2687
 Ipswich, capital of Suffolk, arms, in colour, 4990
 Wolsey's gateway, 1087
 Iquique, nitrate port of Chile, 7014
 Iran, native name for Persia, 6385
 See also Persia

Iraq, formerly known as Mesopotamia, history and description, 6266
 becomes an independent State, 1826
 oil pipeline, cost and yearly delivery, 2966
 Pictures of Iraq
 Arabs selling corn, 6267
 coracle, or gulf, crossing the Tigris, 2498
 flag, in colour, 6973
 scenes, 6274-75

Maps of Iraq
 general and political, 6400
 historical events, 6272-73
 in colour, 7093

See also Mesopotamia
 Ireland, island west of Great Britain, 3061
 Christianity's growth, 3064
 constitution of Republic, 3067
 excavations by Harvard University, 6997
 flag of St. Patrick, 6961
 formerly joined to Scotland, 518
 Free State formed, 1825, 3066
 Home Rule dispute, 1707, 3065
 Irish parliament united with that of Great Britain, 6961
 Picts in Northern Ireland, 769
 population, 3068
 potato-famine tragedy, 2436
 Southern Ireland under Sinn Fein, 1825
 stories of Ireland: see Stories
 Ulster occupied by Scottish settlers in reign of James I, 1206

Pictures of Ireland

arms of National University, in colour, 4989
 buildings, 3060, 3072-73
 flags, in colour, 6965, 6968
 peaty bed in Antrim, 2006
 Republican flag, in colour, 6972
 scenes, 3060, 3069-74
 types, 3069-74

Maps of Ireland

historical events, 602
 in colour, 7083
 natural features, 726-27
 physical features, in colour, 7080
 See also Northern Ireland and Ulster

Ireton, Henry, English soldier, 528, 1210, 521
 Iridaea, edible, 3413
 Iridium, fountain-pen nibs tipped with, 2033, 4222
 melting point, 7073
 Iris (in mythology), handmaiden of Juno, 3517
 Iris (anatomy), how it affects size of eye's pupil, 5128
 Iris (botany), 2689, 6496
 fetid, flower, in colour, 4907
 fetid, wild fruit, in colour, 3666
 garden in Japan, 6626
 specimen of flower, 6379
 yellow, in colour, 6130
 Irish art, illumination of manuscripts, 450, 1923, 3065
 mezzotinted who did fine work in 17th and 18th centuries, 2426
 specimens of work 1000 years old, 3063
 Irish Free State, self-governing Dominion of the British Empire, its formation, 1825, 3066
 See also Ireland

Irish Lights: see Commissioners of
 Irish Melodies, collection of songs by Tom Moore, 1266
 Irish moss, 3413
 Irish Sea, 1257, 1880
 Irish water spaniel, 665
 Iron, British industry, 49, 6004
 atomic structure, 4224
 Australia's production, 2570
 bridges of cast and wrought iron, 547
 cast iron, weight of a cubic foot, 7074
 cast iron, melting point, 7073
 China's iron-ore deposits, 8502
 conductivity, 7073
 heat's effect on, 3331, 4099
 in comets, 3806
 in the Sun, 3116, 4099
 Luxemburg's production, 5652
 magnetic property, 360
 necessary for life, 642
 smelting with charcoal, 49
 smelting with coal, 5884
 United States' production, 3678
 wasting called rusting, 2542
 wrought iron, weight of a cubic foot, 7074
 does iron get tired? 3035
 does not iron burn away in fire? 2542
 is iron heavier when it rusts? 560
 why does iron bend when it is hot? 2043
 why does iron feel colder than wood? 2178

why does iron float on mercury? 814
 why does iron turn red when hot? 5245
 laying iron-surfaced roadway, 2163
 picture series of an ironworks, 51-8

See also Industrial maps of countries
 Iron Age, in Britain, 6998

Iron-Eating Rats, The, fable, 6933

Iron Gates, rapids on the Danube, 4549, 4550

Iron pyrites, in china-clay, 1922

picture of mineral, 1303

Iron-roofing, why is it corrugated? 4762

Ironsides, Cromwell's brigade in the
 Civil War, 522, 1208

Irradiation, what is meant by, 2864

Irrawaddy, one of the great rivers of
 Asia, 6512; map showing course, 2819

Irrigation, 5969

ancient Egyptian, 425

Chaldean system, 300

canal through Australian orchard, 2580

picture-story, 5969-78

terraced rice fields, 1699, 5978

Irving, Washington, American historian,
 novelist and essayist, his Sketch Book,
 4202, 4331; portrait, 4331

searching for records of Columbus, 2975

Irwell, tributary of the Mersey on
 which Manchester stands, Brindley's
 aqueduct across it, 5943

Isaac, patriarch, life-story, 747

Isabella the Catholic, Castilian queen,
 patron of Columbus, 5274

Isabelline bear, 789

Isaiah, prophet in Old Testament, 2977

picture of, by Frederick Shields, 2979

I saw a ship a-sailing, nursery rhyme
 picture, 101

I saw three ships, rhyme, music and
 picture, 5050

Iseult, and Tristram, 6942

Isfahan, old capital of Persia, 6385

Afghans conquer it, 6390

Great or Grand Mosque, 5624, 6395

Puli Chadsu Bridge, 6394

Ishmael, son of Abraham and Hagar,
 622; with Hagar in the wilderness, 620

temple, 6861

Islam: see Mohammedanism

Island, can a dead island become a
 living land again? 4520

world's biggest islands, 7059

Islay, one of the largest of the Inner
 Hebrides, its geology, 2002

Isle de France: see Mauritius

Isle of Man: see Man, Isle of

Isle of Wight, island off coast of Hamp-
 shire, 344

Isle of Wight disease, plague among
 bees, 5492, 5841

Ismail, founder of modern Persia, 6390

Ismaïlia, Egypt, street, 6880

Iso and Isobar, meaning, 6721

Isodorus of Miletus, architect of church
 of St. Sophia, Constantinople, 5742

Isodynamic, meaning, 6721

Isotel and Isohyet, meaning, 6721

Isotherm, meaning, 6721

I spy, game, 3724

Israel: see Israelites

Israel, State of, Palestine, proclaimed
 by the Jews, 6289

flag, in colour, 6973

Israelites, Amalekite wars, 1240, 1860

archaeological discoveries relating to
 their history, 6987

Ark carried to battle, 1738

art dominated by Assyrian art, 3902

Assyria enslaves them, 545

Baal worship, 2481

Babylonian conquest, 2980

Canaan conquered, 1363

Egyptian captivity, 543, 1113

exiles in Persia, 3225

idolatry, 1365, 1738, 2980

kingdom divided, 2357

Midianites defeated, 1244, 1366

moral law, 545

Philistine wars, 1857, 1861

religious beliefs, 543

Temple at Jerusalem built, 1241

wilderness journey, 1118, 1239, 1242

Pictures of the Israelites

picking up quails in desert, 1242

slavery in Egypt, 543

trumpeters' march round Jericho, 1362

worship of the golden calf, 1238

See also Bible, Jews

Israels, Josef, Dutch painter, 3400

his paintings, Children of the Sea, 3403

Helping Mother, 3397

Istanbul, formerly Constantinople, Tur-
 key, 444, 5742, 6916

Alexander sarcophagus, 6980

Greek church ruled by Patriarch, 6132

mosques of Suleiman and Ahmed, 5624

museum contains famous Sarcophagus
 of the Weepers, 4395

named after Constantine, 4406

Turkish conquest's results, 2504, 6107

Pictures of Istanbul

basilica of St. Irene, 5739

buildings and scenes, 6131, 6139, 6141-43

gateway, 76

Mosque of St. Sophia, 5741

Mosque of Shah Zade, 5083

Mosques of Sultans, 6141

people, 6145

Istria, ceded to Italy, 4548

Italian architecture, Bramante and his
 wonderful designs, 6111

Byzantine style that produced St.
 Mark's, Venice, 5743

cathedrals of Milan and Florence, 5992

early basilican churches, 5739

Florence and her noble buildings, 6108

Gothic architecture modified by classi-
 cal traditions, 5992

Renaissance Period, 6107

Romanesque cathedrals, 5746

Vatican and St. Peter's, Rome, 6112

Venice and her lovely palaces, 6113

Renaissance architecture, 6107, 6109,
 6115-22

Italian art, wonder men of Florence, 565

Leonardo and Michael Angelo, 687

Raphael and his time, 819

Venice rises and Italy wanes, 931

Flemish art compared, 1052, 1421

impression on French art, 1058, 1681

master artists, 6183

sculpture, 4521

pictures: see illustrations to above
 articles, and artists' names

See also Sienece art, Umbrian art,
 Venetian art, and so on

Italian language, 4581

Italian literature, 4581

Italian Somaliland: see Somaliland

Italy, republic of Europe, 4909

history from early times, 4783

archaeological discoveries, 6988

Attilla's assault, 2154

Austrian power in, 1442, 4786

Boy Scout movement, 4914

chaos after fall of Roman Empire,
 2278, 4783

civil war in days of ancient Rome, 1535

Dante's hopes for his country, 4582

East African Colonies, 4918

education suppressed, 896

Huns made to withdraw from, 2156

liberation and union, 896, 4787

literature: see Italian literature

Napoleon's conquest, 1455, 4046, 4786

population, 4912

republics formed at end of 13th century,
 3758

Romans conquer, 1405, 1406

Second World War's effect, 1942, 1946,
 4788

secret societies, 896

shipping losses in Second World War,
 4913

territory after First World War, 4787

Pictures of Italy

archaeological discoveries, 4928, 6989-91

flags, in colour, 6973

Florence scenes, 4721-28

ruins of Pompeii, 4923, 6989, 6991

scenes in different cities, 4919-25, 4911,
 4917

Venice, scenes, 273-76

Maps of Italy

animal life of the country, 4790-91

general and political, 4789

in colour, 7088

physical features, 4792-93

plant life, 4796

showing historical events, 4794-95

See also Rome, Florence, Venice,
 and so on

Ithaca, Ulysses king of, 5306

It's a Long Way to Tipperary, marching
 song of two World Wars, 1268

Ittenbach, F., his painting, The Mother
 of Jesus, 3594

Ivan III, duke of Muscovy, 5893

Ivan IV, the Terrible, first Tsar of
 Russia, 5893

refused blessing by Metropolitan, 5895

Ivanhoe, novel by Sir Walter Scott, 717,
 1658

Ivanovo, Russia, public gardens, 6029

Ivinghoe Beacon, view of Chiltern Hills,
 471

Ivory, Japanese carving, 6623

weight of a cubic foot, 7074

ancient carvings, 70, 3385, 6736

chessboard from Florence, 74

Ivory cap, edible fungus, 3411

Ivory Coast, French West African
 colony, 6749

Ivory-nut, cross-section, 949

Ivory palm, buttons made from, 2942

Ivy, climbs by roots, 458

shoots bend away from light, 585

fruit, in colour, 3670

roots for climbing and clinging, 456

spreads out its leaves, 199

Ivy-leaved bell-flower, 5892

flower, in colour, 6127

Ivy-leaved lettuce, what it is like, 4782

flower, in colour, 4906

Ivy-leaved sow-bread, 4782

flower, in colour, 4907

Ivy-leaved speedwell, 4543

flower, in colour, 4662

Ivy-leaved toadflax, seed box, 949

flower, in colour, 4286

Ixion, in mythology, 6930

Izmir: see Smyrna

J

Jabbok, ford crossed by Jacob, 866

Jabin, defeated by Israelites, 1364

Jabiru, American bird, 3868

Jacamar, bird, 3253

Jacana, or water pheasant, 3876

picture, in colour, 3144

Jacinth, form of zircon, mineral, 1301

Jack, lifting tool, 6352

Jackal, animal, 539

pictures, 536, 541

Jackal and the Lion, story, 4969

Jack and Jill, rhyme, picture, 1093

Jack-by-the-hedge or Hedge garlic, 4290

Jackdaw, characteristics, 2769

feeding habits, 6855

picture, in colour, 2768

Jackdaw of Rheims, picture to poem.
 4927

Jack Frost Opens the Chestnut Burrs,
 story, 5833

Jack fruit, in colour, 2688

Jack-go-to-bed-at-noon: see Goat's-
 beard

Jack-run-the-hedge, seeds scattered by
 animals, 948

Jackson, Frederick George, English
 Arctic explorer, 6436

meeting with Nansen, 6440, 6443

portrait, 6431

Jackson, Helen: see Poetry Index

Jackson's yuhah, bird, 2893

Jack Sprat had a Pig, rhyme, 230

Jack Tar, who is he? 5493

Jack the Giant Killer, story and pic-
 ture, 655

Jacky Jacky, Australian hero, 6069

Jacob, patriarch, story, 747, 865, 994

grief at Joseph's supposed death, 989

Pictures of Jacob

brought by Joseph to Pharaoh, 993

Isaac deceived by him, 746

Joseph relating his dreams, 989

last hour with sons, 867

meeting with Esau, 867

meets Rachel at the well, 864, 939

sees coat of many colours, 991

Jacobins, a political club in the French
 Revolution, 652

Jacob's ladder, puzzle, with picture, 1246, 2361
 Jacob's well, at Shechem, 3464
 Jacobs, William Wymark, English novelist, 3713
 Jacobs-Bond, Carrie, American composer, 1269
 Jacobus, value of: see old English coins, 7070
 Jacquard, Joseph Marie, French mechanic and inventor, 5942
 portrait, 5939
 Jacquard loom, used in cotton industry, 178
 Jacques, Charles, French painter, 2790
 Jacquier, Henri, his painting, Algerian Horseman, 1904
 Jade, mineral, 1301
 Jadwiga, Polish princess, 5056
 Jaen, old Spanish cathedral city in Andalusia, 6372
 Jaffa, ancient Joppa, seaport of Palestine, 6269
 Nazarene community, 6172
 boys gathering oranges, 1815
 landing place, 3467
 modern Jewish quarter, 6278
 well in house of Simon, 3467
 Jaffa Gate, Jerusalem, picture, 3470
 Jafar, Haroun-al-Raschid's friend, 657, 6806
 Jagger, Charles S., English sculptor, 4768
 his sculpture, The Virgin Mary, 4766
 Jagiello, king of Poland and Lithuania, 5026
 Jago's goldsinny, fish, in colour, 5099
 Jaguar, characteristics and habits, 419
 pictures, 422-3
 Jainism, Vardhamana founds, 5080
 Jains, wonderful temples, 5626
 Jaipur, capital of Jaipur State, in Rajputana; market-place and street, 2950
 Jalap, plant, 2684; in colour, 2687
 Jamaica, British West Indian colony, 3554
 Pictures of Jamaica
 arms, in colour, 4985
 British sinking Spanish ships, 2079
 children at school, 3561
 cutting bananas, 3557
 flag, in colour, 6967
 Kingston, 3562
 natives outside hut, 3561
 silk-cotton tree, 2560
 sugar-cane plantation, 2288
 map, general and political, 7030
 map, in colour, 7103
 Jamaica pepper: see Allspice
 Jambu fruit pigeon, in colour, 3262
 James the Great, St., apostle, 6787
 6790
 discussion on Jewish customs, 6538
 portraits, 694, 6787
 James the Less, St., 6790
 portrait, 6787
 James I, king of England, 1084
 England and Scotland united, 1205, 6961
 persecutions that led to the sailing of the Mayflower, 1206
 Scottish arms added to English, 4984
 ensign, in colour, 6968
 Inigo Jones showing him plans, 4229
 portrait, with parents, 4134
 portrait, with wife and son, 4131
 Puritans pleading with him, 1212
 James, Prince (afterwards James I of Scotland), captured by Henry IV of England, 956
 James II, king of England, throne lost to William of Orange, 1214
 James IV, king of Scotland, death at battle of Flodden, 1082
 marries daughter of Henry VII, 1073
 James V, king of Scotland, father of Mary Queen of Scots, 1082
 James VI, king of Scotland: see James I, king of England
 James, Henry, English novelist, 4333
 James, John, British architect, 4228
 James, Thomas, Hargreaves's partner in the spinning-jenny, 5940
 Jameson, George, Scottish portrait painter, 1928
 portrait of Lady Hope, 1924

Jamestown, capital of St. Helena, 3558
 Jamestown, Virginia, settlement by Captain John Smith, 2075
 Jammes, Francis: see Poetry Index
 Jane Eyre, famous book, 3582
 Jan Mayen Island, westerly drift of measured, 3037
 Jannina, town of Greece, 5768
 Janssen, Johann and Zacharias, Dutch spectacle-makers, 1885
 January, origin of name, 5335
 Janus, god of ancient Rome, 3520
 Arch of Janus, Rome, 1781
 January named after, 5335
 Japan, country of eastern Asia, 6617
 architecture, 5628
 art, embroidery and enamel ware, 6738
 atom bombs of Second World War, 1948, 6821
 bees imported to fertilise trees, 6450
 earthquakes common, 442, 6622
 extension of franchise, 6620
 invades China, 6509
 literature, 5675
 Pearl Harbour attacked, 3799, 6509, 6621
 Second World War ends by surrender, 1948
 State of Manchukuo formed, 6621
 stories of Japan: see under Stories
 victorious struggle with Russia, 6620
 Pictures of Japan
 avenue of Buddhas, 2031
 flags, in colour, 6973
 girl in Japan, 89
 irrigation methods, 5970
 Mount Fujiyama, 2247
 natives tea-picking, 2284
 people and scenes, 6617, 6619, 6623, 6626-29
 Tama-Dare waterfall, 2500
 telegraph wires in street, 1469
 Maps of Japan
 general and political, 6625
 in colour, 7096
 Japanese, a mixed race, 2184
 Japanese caterpillar, in colour, 6209
 Japanese isinglass: see Agar-agar
 Japanese saw-fish, picture, 5231
 Japanese Sparrow, A, story, 6686
 Japetus, moon of Saturn, 3354
 Jarabis, site of Carchemish, 6871
 Jaray, Sandor, sculpture of Hamlet, 5258
 Jardine's harrier, bird, 3633
 Jarrah, Australian tree, 2446, 3789
 picture, 2374
 Jason, who he was, 3040
 Jasper, form of quartz, 768, 1301
 Jassy, city of Rumania, 6771
 Jauf and Hail, capital of Jebel Shammar region, Arabia, 6242
 Java, island of East Indies, 5532
 kapok grown, 2662
 skull of Pliocene Age, found in, 1877
 Pictures of Java
 Boro Budur Temple, 5084, 6993
 native band, 5542
 native ox, the bantin, 1159
 peacock, 4251
 railway engine, 3511
 terraced rice-field, 5978
 wedding guests, 5542
 wharf at Batavia, 5542
 woman weaving, 5542
 map, in colour, 7097
 map of animals, industries, and plants, 5540
 Java frankincense, or benzoin, 2938
 Java Man, skull found by Dr. Eugene Dubois, 2539
 Java sparrow, characteristics, 2896
 Jay, characteristics and habits, 2770
 Californian jay, 3262
 guarding its nest, 2773
 in colour 2899
 Jeanette, De Long's ship in Arctic exploration, 6436
 Jeanne Parelle, story, 4970
 Jeans, Sir James, English astronomer, 2996
 Jebel Druse, Syrian State, 6270
 Jebel Shammar, Arabian Bedouin State, 6265
 Jedburgh Justice, what is meant by, 243
 Jedda, Arabian port, 6264
 Mecca gate, 6276

Jefferies, John Richard, English writer on country life, 2970, 3829
 Jeffers, Robinson, American poet, 4205
 Jefferson, Thomas, American statesman, 3794; portrait, 3791
 Jeffreys, Judge, his brutality, 4008
 Jehangir, early king of India, 2811
 Jehol, Chinese provinces, Japan conquerers, 6509, 6621
 Jehoshaphat, Valley of, view, 3465
 Jehu, appointed king, 2728
 Jelenia Gora, town of Poland, main street, 5038
 Jelly-fish, its story, 6693
 sting as protection, 42
 picture with eggs, 6697
 under microscope, 1915
 Jellyfish in Search of a Monkey, story, 36
 Jena, battle of, Napoleon's victory, 1456
 picture of battle, 1449
 Jenghiz Khan: see Ghenghiz Khan
 Jenner, Edward, English physician, 2507, 5492; portrait, 2501
 Jenner, Edward: see Poetry Index
 Jenolan caves, stalagmites and stalactites, 6845
 Jensen, Johannes V., Danish writer, 4940; portrait 4937
 Jephthah, his story, 1366
 pictures, 1363, 1365
 Jerboa, the way it jumps, 1035
 pictures, 1031-2
 Jerez, Andalusia, 5278
 Jericho, Christ passes through it, 4214
 excavated by Sir Flinders Petrie, 6988
 taken by Israelites, 1363
 march of the Israelite trumpeters, 1362
 ruins, 3467
 Jerman, Edward, Royal Exchange built by him, 4230
 Jeroboam, Ahijah's message, 2356
 Jerome, St., great scholar who drew up the Vulgate, 1386
 painting by Correggio, 939
 portrait, 1385
 Jersey, largest of the Channel Islands, flag, in colour, 6966
 Jersey cattle, characteristics, 1154, 1160
 Jerusalem, holy city of Palestine, 6269
 condition under Roman rule, 3717
 conquered by David, 1985
 Nebuchadnezzar captures it, 2980
 Roman capture, 2877
 Saladin captures it, 3270
 surrendered by Turks to General Allenby, 6268
 work of Christ's disciples, 1783
 Pictures of Jerusalem
 Christ's tomb, 3464
 Church of the Sepulchre, 3469
 Damascus Gate, 3470
 general views, 3463, 3468
 Herod's Gate, 3466
 Jaffa Gate, 3470
 Jewish quarter, 6279
 Julian's way, 6279
 Mosque of Aska, 6278
 Mosque of Omat, 5632, 6278
 Mount of Olives and Garden of Gethsemane, 6278
 road outside, 6053
 room of Last Supper, 3469
 site of the Temple, 3470
 street scene, 3469
 terrace of Herod's Temple, 3469
 tomb of David, 3468
 tombs of the Kings, 3464
 Via Dolorosa, 3464
 Wailing Wall, 3469, 6263
 Jerusalem artichoke, food value, 1436
 meaning of name, 2442; picture, 2439
 Jervis, John, Lord St. Vincent, English admiral, 1453
 Jesse, father of David, 1620
 Jesselton, capital of British North Borneo, 3425
 Jessica, in Shakespeare's play, The Merchant of Venice, 6042, 6531
 Jessop, Gilbert, English cricketer, 1613
 Jesuits, religious order founded by Loyola, 1390, 3760
 Jesuits' bark, or quinine, 2684
 Jesus Christ, His teaching, 3342, 3959, 4089, 4211
 agony in Garden of Gethsemane, 4586
 anointed by woman, 4462

ascension into Heaven, 4826
 baptised by John, 3720
 beauty of His life, 3345, 4459
 betrayal, 4585
 birth and boyhood, 3589
 blind beggar cured, 1359
 burial, 4824
 calling of the disciples, 3960
 charm of His personality, 4339, 5589
 children blessed by, 4212
 courage of, 373
 crucifixion, 4821
 date of Christian era, 117, 2295, 5585
 denounced the Pharisees, 4340
 deserted by His disciples, 4588
 disciples assert their loyalty, 4586
 dying words, 2109, 6418
 entry into Jerusalem, 4480
 farewell words to disciples, 5433
 flight into Egypt, 3590
 foretells His death to His disciples, 4460
 history changed by His advent, 1665
 how His teaching spread, 1905, 2156
 inscription on cross, 4822
 kingdom of Heaven pictured by, 5061
 last days of Jesus, 4459
 last supper with disciples, 4585
 life of Nareareth, 3590
 love was His message, 1666
 Martha and Mary receive Him in their home, 4214
 Mary Magdalene's sins forgiven, 4212
 Mohammed's teaching about Him, 2282
 names given to His followers, 6417
 Nicodemus visits, 4214
 Peter's denial of, 4702
 pictures in catacombs, 446
 questions doctors in the Temple, 3580
 represented in Syrian art, 443, 448
 resurrection, 4821, 4824, 4826
 sayings of Jesus, 5307
 second coming anticipated by disciples, 5560, 6915
 sentenced by Pilate, 4706
 Sermon on the Mount, 4943
 soldiers' ill-treatment of Him, 4821
 spiritual patriotism, 3342
 temple cleared by, 4214, 4462
 temptation in the wilderness, 3839
 trial, 4588, 4701
 visit of wise men, 3590
 widow commended, 4462
 Zacchaeus called down from tree, 4214
 zeal of His disciples, 5557, 5560
 what language did Jesus speak? 4994
 when was Jesus born? 5858

Pictures of Jesus Christ

A Little Child Shall Lead Them, 3345
 appearing to Mary Magdalene, 1680
 bearing Cross, 4823
 betrayal of Christ, by Cimbabue, 572
 birthplace, 3465
 calling Matthew, 3344
 childhood series, 3588, 3594
 Christ among the Doctors, 931
 Christ in the Manger, 1051
 Christ washing Peter's feet, 2551
 comforting the sick and weary, 5435
 crucifixion, 4821, 4823
 denial by Peter, 4584
 Descent from Cross, by Raphael, 4825
 discovers disciples sleeping, 4703
 Ecce Homo, 4705
 First Christmas Night, 3594
 Flight into Egypt, by Giotto, 570
 Good Shepherd, by Sybil Parker, 3838
 head portraits of Jesus, 117, 694, 1667
 Hope of the World, 5559
 Infant Jesus and Infant St. John, by Murillo, 1311
 initial letter picture, 1925
 In the Wilderness, by B. Rivière, 3839
 Jesus, Mary, and St. Anne, by Leonardo Da Vinci, 689
 Last Supper, 4585, 4701, 4703
 life scenes, in colour, 3961-64
 Mary and Jesus, mosaic, 447
 mocked by Herod, 4705
 Nativity, 570, 1665, 3588
 Nativity, series in colour, 1661-1664
 Nicodemus and Christ, 3296
 Night of Betrayal, 4584
 parables, 5060-63, 5186-5190
 portraits, 445
 resurrection, 4827
 riding into Jerusalem, 4461

sculpture by Thorwaldsen, 4655
 Sermon on the Mount, 4944, 4947
 speaking to Peter, 4213
 statue at Rio de Janeiro, 7014
 statue in Andes, 7014
 Suffer Little Children, 4213, 5436
 talking to children, 5307
 teaching, 3959, 4089, 4211, 4459, 5308, 5309, 5433
 tomb at Jerusalem, 3464
 trial, 4705
 walking through cornfield, 4461
 See also Bible; Disciples; Mary, the mother of Jesus
 Jesus College, Cambridge, arms, 4988
 Jesus College, Oxford, arms, 4988
 Jet, variety of lignite, 2834
 Jet engine, invention by Sir Frank Whittle, 5950
 Jet planes, types, 4687, 4689
 sectional drawing of engine, 4694
 Jet propulsion, future, 4810
 Jethro, father-in-law of Moses, 1114, 1240
 Jevons, Herbert Stanley, British professor of Economics, 5884
 Jew, legend of Wandering Jew, 1272
 Jewel Tower, London, 4226
 Jewellery, story of a diamond, with pictures, 6718
 Jewry, origin of term, 3152
 Jews, Semitic people of Mediterranean type, captivity, 615
 character, 1665, 5879
 confirmation ceremony, 5680
 Cyrus liberates them, 6387
 extension of civil rights to them in Great Britain, 1585
 freed by Judas Maccabaeus, 890
 history in the Bible, 118
 Hitler denies them citizenship, 4303
 Jewish Republic at Birobidjan, 6016
 life in England under Normans, 3152
 medieval ghettos, 6857
 Palestine as national home, 6269
 persecution of the Jews, 5026
 special method of reckoning dates, 2295
 types of people, 6016
 what is a ghetto? 6857
 Jeypore : see Jaipur
 Jezebel, encouraged Baal worship, 2481
 Naboth killed by her command, 2606
 Jezreel, Jehu's entry into, 2728
 view, 3464
 Jibuti, capital of French Somaliland, 6750, 6754
 Jimmu, Japan's first emperor, 6617
 jingling, game, 1746
 Joab, general of David, 1986
 Joan of Arc, Maid of Orleans, 958, 2251, 3920
 white added to French flag in memory of her, 5736

Pictures of Joan of Arc

at coronation of Charles VII, 2257
 facing accusers, in colour, facing 2251
 painting by Onslow Ford, 2260
 painting by R. Wheelwright, facing 373
 receiving last Sacrament, 2256
 sculpture by Antonin Mercié, 5260
 sculpture by Marie of Orleans, 5009
 statue by Frémiet, 2253
 tied to stake in Rouen, 2257
 trial, painting by de Monvel, 2256
 vision, painting by G. W. Jov, 2251
 vision, painting by Royer, 2259
 welcomed by populace, 2257
 Job, story of his sorrows, 497
 attitude toward God, 3098
 owned 3000 camels, 1525
 quotation : see Poetry Index
 pictures, 497-99
 Jochebed, mother of Moses, hid her baby in the Nile, 1113
 Johannesburg, South Africa, 3188
 Jews, 3189, 3191
 Johansen, Frederick, Norwegian Arctic explorer, 6439
 leaving Fram with Nansen, 6443
 John, St., apostle's life story, 6787
 exiled at Patmos, 5781
 Gospel translated by Bede, 6920
 his book of the Revelation, 616
 portraits, 6734, 6787
 with St. Francis and Madonna, 565
 John the Baptist, St., his story, 3717

camel-hair garments, 1525
 imprisonment, 3959
 Jesus baptised by him, 3726

Pictures of John the Baptist

as a boy, by J. J. Tissot, 3717
 by Andrea del Sarto, 824
 Donatello's sculpture, 5256
 Guido Reni's painting, 3719
 Rodin's sculpture, 4652
 St. John as a boy, sculptures, 4651, 4898, 5253
 St. John in the Desert, by Raphael, 824
 sculpture by Benedetto da Majano, 4529
 Sir J. Reynolds's famous picture, 3718
 with Infant Jesus, by Murillo, 1311
 John, king of England, defeated by Philip Augustus of France, 3920
 Magna Carta signed by him, 836
 reign in which England lost most of her possessions, 835
 in Shakespeare's play, 6289
 submission to Pope, 6922
 wild boars preserved by him, 1656
 Runnymede scene, 836, 838
 John I, king of Portugal, 5398
 John, Augustus, English portrait and landscape painter, 2677
 George Bernard Shaw, portrait, 2673
 Madame Suggia, 2673
 John, Sir William Goscombe, British sculptor, 4768
 Drummer Boy, sculpture by, 4771
 John Brown's Body, historical poem by Robinson Jeffers, 4205
 John Bull, who is John Bull? 6839
 John Dory, fish, 5104
 sound made by, 6230
 John Gilpin, poem by Cowper, 2104
 John Inglesant, religious novel by John Henry Shorthouse, 3712
 John Maynard, pilot, story, 6694
 John of Fornsete : see Poetry Index
 John of Gaunt, his claim to crown of Castile and Leon, 5410
 John of Leyden, medallion portrait, 6733
 John of the Golden Voice, story, 6811
 Johns, C. H. W., Babylonian Code of Laws translated by, 428
 Johnson, Esther, with Swift, 1729
 Johnson, Dr. Samuel, English author, poet, and literary critic, 1975
 Boswell's Life of Johnson, 1976
 on optimism, 3460
 on patriotism, 3341
 Reynolds's friendship with him, 5693

Pictures of Dr. Johnson

Goldsmith walking with him, 1977
 portrait, 4133
 visiting Sir Joshua Reynolds, 5699
 with friends at dinner, 1975
 Johnson, Lionel Pigot, British poet, 4081
 Johnson, Thomas, woodcarver, 6737
 Johore, Federation of Malaya, 3421
 Sultan of Johore surrenders Singapore to British in 1824, page 2080
 flags, in colour, 6967
 Joint (anatomy), human body's joints described, with diagrams, 1566-69, 1692-95
 Joint (in engineering), 6350
 Jointed glasswort, or marsh samphire, member of Spinach family, 2436
 uses and description, 5782
 Joint Stock company, what it is, 5140
 Joinville, Jean de, French chronicler, 2251, 4453
 Joliot, M. and Mme., French scientists, 4224
 atomic research experiments, 4814
 Jolly Miller, The, game, 3476
 Jonah, story of prophet, 2856
 thrown into the sea, 2855
 Jonas, Lucien, Seeker after Knowledge, painting, 2975
 Jonathan, friendship with David, 1860
 Philistines attacked by, 1857
 David, with Jonathan, 1856
 Jones, Adrian, English sculptor : Green Park Arch Quadriga, 5129
 Jones, Sir Horace, designer of Tower Bridge, 4230
 Jones, Inigo, England's Renaissance architect, 6240
 life and work, 4228
 perfection of classical style in England, 6605

- work compared with that of Wren, 6244
banqueting hall, Whitehall, 4233
bridge at Wilton House, 6252
showing plans to James I, 4229
water gate, Adelphi, 1220
- Jones, J. F.**, survey of Assyria by, 6368
- Jones, Sir William**, British Orientalist :
see Poetry Index
- Jones, Thomas S.** : see Poetry Index
- Jonson, Ben.** English poet, dramatist,
and writer of masques, friend of Shakespeare, 4478; portrait, 1261
with Shakespeare at Mermaid Tavern,
859
See also Poetry Index
- Jonson, or Janssen, Cornelius**, Dutch
portrait painter, 1928
- Sir John Coke**, portrait, 1927
- Joppa** : see Jaffa
- Joram, King**, slain by Jehu, 2728
- Jordaens, Jacob**, Flemish painter, 1422
Singing the Old Songs, painting, 1427
- Jordan, Dorothy**, actress, portrait by
Hoppper, 2056
- Jordan, Kingdom of** : see Transjordan
- Jordan, River**, 6288
- Naaman ordered to wash in, 2727
- scenes, 3465, 3469, 3470
- Jorulla silk-moth**, of Mexico, caterpillar,
in colour, 6210
- Joseph** (husband of the Virgin Mary),
989, 3589, 3590
- Joseph** (son of Jacob and Rachel), 886
in Egypt, 6876
brings his father to Pharaoh, 993
brothers stain his coat, 990
calls his brother Benjamin, 988
overseer of Pharaoh's granary, 993
relates dreams to his father, 989
sends brothers away loaded, 988
sold into slavery, 992
- Joseph of Arimathea**, legend, 3037
Jesus buried by him, 4824
- Josephine**, Empress, divorce, 1457
marriage to Napoleon, 1442
- Josephson, Ernst**, Swedish painter, 3398
A Portrait, painting, 3404
- Joseph's Well**, Dothan, 3466
- Josephus**, Jewish historian, 5677
- Joshua**, Israelite leader, 1240, 1363
prays in tabernacle with Moses, 1243
- Josselin, Chateau de**, in Brittany, 6358
pictures, 6363, 6366
- Jostedalsbræ Glacier**, Norway, 5156
- Jotunheimen Mountains**, Norway, 5159
- Jouanneault, Albert**, Child and Kitten,
sculpture, 5133
- Joubert, Joseph**, French moralist, 4456
- Jouffroy d'Abbas, Marquis Claude de**,
French inventor, 3733
- Joule, James Prescott**, English scientist,
5442, 6313 ; portrait, 6309
- Jourdan's Lapherus**, beetle, in colour,
6336A
- Journal of the Plague Year**, by Daniel
Defoe, 1482
- Joust**, medieval tournament scene, 3506
- Joy, George William**, British painter,
Nelson leaving his grandmother, painting,
1446
- Vision of Joan of Arc, 2251
- Joy-stick**, in aeroplane cockpit, 4692
- J.P.**, stands for Justice of the Peace, the
work of, 4776
- Jubilee**, what is it? 6849
- Jubilee Bridge**, over River Hoogli,
India, 555
- Judah**, Babylon conquers it, 545
- war with Israel, 2357
- Judas Bible**, what it is, 5734
- Judas Iscariot**, the betrayal, 4585
- Betrayal, painting by Cimabue, 572
- listening to hymn after Last Supper, 4585
- portrait, 6787
- portrait from Leonardo's famous Last
Supper, 694
- remorse of Judas, 4587
- Judas Maccabaeus**, Jewish patriot, 890
- Judge, duties and work, 244, 4775
- Judge, Jack**, English composer, 1268
- Jug**, 16th-century Turkish one, 71
bronze, left by Romans in Britain, 722
- Grecian, 71
- Jugoslavia** : see Yugoslavia
- Juiva**, name sometimes given to the
Brazil nut, 2070
- Jujuy**, Argentine town, 7018
- Julia**, character in Shakespeare's Two
Gentlemen of Verona, 6039
- Julia**, daughter of Titus, portrait, 2878
- Juliacca**, Peru, cathedral, 7014
- Juliana**, queen of Netherlands, 5530
- Julia Sabina**, wife of Hadrian, 2878
- Julier Pass**, Roman highway over the
Alps, 4668
- Juliet**, character in Shakespeare's
Measure for Measure, 6050
- Juliet**, character in Shakespeare's Romeo
and Juliet, 6161
- Romeo at her tomb, 6167
- Julius Caesar, Caius**, Roman general,
statesman, and author, 1535, 2873
books that he wrote, 588
- Caesar and Laberius, 5427
- came to Britain, 2397, 6575
- Cicero plots against him, 4355
- embarks for Britain from France (55
B.C.), 2397
- Pharnaces crushed by Caesar, 5494
- portrait statue in British Museum, 4404
- Rubicon crossed by, 2874, 5615
- ships scattered off Dover, 2398
- Solar year introduced, 1536
- story of Shakespeare's play, 6292
- portraits, 45, 2873, 2878
- looking out across the face of Kent,
frontis., Volume 5
- receiving submission of Gaulish chief-
tain, 2875
- statue in Capitol, Rome, 1537
- tower in Provence, built by him, 76
- Julius II**, Pope 1503-1513, page 1634
builder of St. Peter's, Rome, 6112
- Michael Angelo's wonderful ceiling in
Sistine Chapel painted for him, 696
- Raphael appointed artist to, 826
- picture by Raphael, 822
- July**, origin of name, and picture, 5339
- Jumbo**, elephant at London Zoo, 2022
- Jumnos, Rucker's**, beetle, in colour,
6336A
- Jumping**, why do I jump when I get a
shock? 4892
- Jumping bean**, what is inside it? 4638
- Jumping motion device**, 6349
- June**, origin of name and picture, 5338
- Jungfrau**, mountain of the Bernese
Oberland, Switzerland, ice grotto, 4671
- Jungle fowl**, Sonnerat's grey, 4249
- Junō**, or Hera, goddess of ancient Greece
and Rome, 3514
- jealousy of Io, 4484
- June named after her, 5338
- sculptures, 4141, 5134
- Jupiter** (astronomy), planet, 3353
- appearance and size, 3118
- distance from Earth, illustration, 2990
- distance from Sun, 3118, 3354
- effects on Brooks' comet, 3602
- facts and figures, 7061
- Galileo's discoveries, 3610
- mass of boiling metal, 3482
- distance from Sun, 17
- path through space, 15
- with belts and red spot, 3354
- Jupiter**, god of ancient Rome, 3514
- statue one of the Seven Wonders, 4884
- temple at Spalato, 5504
- huge statue at Olympia, 4888
- temple at Pompeii, 5499
- Jupiter and the Ass**, fable, 3990
- Jura Mountains**, mountain range be-
tween Switzerland and France, 4104
- Jurassic Age**, what the Earth was like
then, 1505
- animal life, 10, 1507
- map of Britain, 1506
- plesiosaurus, 1505
- Jury**, what it is, 4777
- trial by jury in days of Alfred, 2907
- Justice**, definition, 243
- International Court of Justice, 6478,
6482
- Ulpian's definition of it, 4774
- Divine Justice, by Prudhon, 1807
- Justice of the Law, painting by Simmons,
3296
- painting by Dagnan Bouveret, 242
- Power of the Law, painting by Blash-
field, 3296
- symbolical painting, 243
- Justice is Best**, story with picture, 1767
- Justice of the Peace**, his work, 4776
- Justinian**, Byzantine emperor, built
Church of St. Sophia, Constantinople,
5742
- Justinian code**, what it is, 4774, 5616
- Jute**, how the fibre is obtained, 2568
- British Empire and Commonwealth pro-
duction, 2074
- India world supplier, 2811, 4258
- uses, 1439, 1604, 2568
- plant, in colour, 2685
- Jutland**, Danish peninsula, 5148
- Jutland, battle of** (1916), British victory
ended Germany's sea power, 1710
- Jack Cornwall's heroism**, 6192
- Juturna**, mythological nymph, 3529
- Juvenal**, Roman satirical poet of the age
of Trajan ; lived about 60-140 A.D.
on Rome's degeneration, 1538, 5432
- Juvenile Courts**, how they work, 4904
- Juventas**, cupbearer of old gods, 3517

K

- Kaaba**, sacred shrine at Mecca, 6276
- Kaaden**, town of Bohemia, Czecho-
slovakia, scene, 4564
- Kabaka**, ruler of Uganda, 3316
- Kabul**, capital of Afghanistan, 6391
bazaar scene, 6392
- Kachins**, hill-people of Burma, part in
Second World War, 2814
- Kado**, Burma, modern temple at, 5082
- Kadsutoyo** and the goblin, story, 2384
- Kaffir**, stories told to Kaffir children,
4969 : see also Bantus
- Kagu**, bird, characteristics, 3874, 2641
- Kaguya**, Lady, story, 2512
- Kahlenberg**, Sobieski's service in chapel
on hill near Vienna, 5027
- Kaieteur Falls**, British Guiana, 3558,
7059
- Kainozoic Era**, 646
- Kaiser Wilhelm II Land**, Drygalski dis-
covers it, 6556
- Kaka**, New Zealand, bird, 3498
- Kakapo**, owl parrot, 3502, 3497
- Kalahari Desert**, South Africa, what is
the Great Hole? 6838
- Kalanite**, alum, mineral, 1304
- Kalat Seman**, Syria, basilica, ruins, 5752
- Kaleidoscope**, how to make, with
pictures, 876, 6177
who invented the kaleidoscope? 6730
- Kalilah and Dimnah**, name of Pilpay's
Fables, 6933
- Kalmar**, ancient Swedish cathedral city
and Baltic port, Union of Kalmar,
5157
- medieval castle, 5160
- Kalutunah**, Eskimo chief, 6432
- Kamakura**, Buddha's statue, 5078
- Kampala**, commercial capital of Uganda,
3316
- Kanchanganga**, mountain in the Hima-
layas, 5620 : view, 2247
- Kandahar**, walled trading centre in
south Afghanistan, 6391
- Kandy**, old capital of Ceylon, 2813
- king deposed by the British (1815), 2079
- Temple of the Tooth, 2816
- Kane, Elisha Kent**, American Arctic
explorer, 6432 ; portrait, 6431
with comrades in Arctic, 6441
- Kangaroo**, pouched mammal of Aus-
tralasia and New Guinea, 2387, 2444
- Englishmen's first sight of one, 2148
- antelope variety, 2393
- jumping kangaroo, 2387
- various species, 2393, 2395, 2456
- Kangaroo rat**, characteristics, 2390
- Kangaroo tree**, 2396
- Kansas**, American State, flag, in colour,
6971
- Kansu**, Chinese province, 6500
- Kant, Immanuel**, famous German
philosopher, 4844
- writing in study, 4843
- Kaplanian**, story of, 5827
- Kapitz, Professor**, Russian scientist,
cold extremes obtained, 6314
- Kapok**, what is it? 2662
- Kappel**, Switzerland, battle of, 4677
- Kaptein, Professor**, on truth, 2996
- Kapurthala**, India, temples, 5082
- Karabel Pass**, near Smyrna, Hittite
carvings found, 6872

- Karachi**, capital of the Dominion of Pakistan, 2810
- Karageorge**, Serbian patriot, 4555
- Karakoram Mountains**, lofty range forming an immense barrier between Central Asia and Kashmir, 6500, 6512
- Karamzin**, Nicholas first Russian historian, 4816
- Karangahape**, New Zealand goldmining town, 2703
- Kara Sea**, summer trade route, 6014
- Karelia**, republic of the U.S.S.R., 6013, 6014
- map, 5904
- Karelian Isthmus**, area taken from Finland by Russia, 5154
- Karlfeldt**, Eric Axel, Swedish poet, 4942
- Karli**, India, rock temple, 5626
- Karłowicz**, Polish musician, 5029
- Karlsefne**, Thorfinn, Viking navigator, 1014
- Karlskrona**, Swedish port, 5152
- Karnak**, village of Upper Egypt, on the site of ancient Thebes, 5380
- famous ruins at, 6877
- Mariette's work in disclosing temple, 6880
- Avenue of Sphinxes, 5385, 5387
- genealogical tree of Rameses, 6864
- hypostyle hall, 5381, 5386
- lion-headed figure from, 6865
- temples, 5385, 5388
- wall carving, 6864
- woman of, 6875
- Karolyi**, Count, Hungarian statesman, 4551
- Karri**, Australian tree, 2446
- Kashgar**, town in Sinkiang, 6510
- Kashmir**, native state of northern India, 6500, 6512
- Security Council of Uno deal with problem of, 6481
- river boats at Srinagar, 2955
- Srinagar, the capital, 2951
- Kasprovicz**, Polish poet, 5029
- Katabatic**, what it is, 6721
- Kataer**, Russian writer, 4820
- Katanga**, district of Belgian Congo with important industries, 6752
- Kate Barlass of the Broken Arm**, 6952
- Katharina**, in Shakespeare's *Taming of the Shrew*, 6044
- Katherine**, queen of England, French wife of Henry V, 958
- in Shakespeare's *Henry V*, 6291
- Katrine**, Loch, beautiful Scottish lake in Perthshire, Ellen's Isle, 1337
- Kauffmann**, Angelica, Swiss painter. Vestal Virgin, painting by, 3536
- Kaunas**, Lithuania, scenes, 6030
- Kauri pine**, description and uses, 3789
- New Zealand's forests of, 2694
- Kavala**, hero of, story, 6685
- Kawa**, Eastern Sudan, discovery of Tirhakah's shrine there, 6868
- Kay**, John, of Bury, inventor of fly-shuttle, seeks refuge from mob, 4499
- Kaye-Smith**, Sheila, English novelist, 3714
- Kazakhi-Kirghlz**, shepherd-horsemen of Russia, 6016
- Kazakhstan**, republic of U.S.S.R., 6014
- map, 5904
- Kazan**, trading centre of eastern Russia, on the Volga, 681, 6017
- Kazimain**, Iraq, mosque, 6274
- Kea**, New Zealand bird, 2894, 3498
- picture, 3499
- Keats**, John, English poet, 2599
- appreciation of opening flowers, 84
- immortal sonnet written after first reading Chapman's *Homer*, 5179
- writing a poem, 2597
- See also Poetry Index
- Keble**, John, English religious leader and writer of hymns, portrait, 1759
- See also Poetry Index
- Keble College**, Oxford, arms, in colour, 4988
- Kedah**, State of the Federation of Malaya, 3423
- flag, in colour, 6967
- Kedron**, Valley of, view, 3469
- Keep**, tower built by Normans, 717
- Keflavik**, Iceland, airport at, 5149
- Kelantan**, State of Federation of Malaya, 3423
- ensign, in colour, 6967
- Keller**, Saxon weaver, experiments in making paper from wood-pulp, 1294
- Kellgren**, Johan Henrik, Swedish poet, 4942
- Kells**, town in Co. Meath, Saint Columba's Cross, 3060
- sculptured coffin lid, 3060
- Kelp**, source of iodine, Ireland's trade in, 3068
- produced from seaweed, 3410
- Kelvin**, William Thomson, Lord, British scientist and mathematician, 5948
- calculation of number of stars, 3723
- definition of sensitive and latent heat, 5566
- J. P. Joule befriended by him, 6314
- researches, 6314
- telegraphy's development, 1803
- wire first used for sounding sea-depths, 2413
- portraits, 4131, 5939
- Kemal**, Mustapha, first president of Turkey, 6136; portrait, 6137
- Kemble**, Fanny, Shakespearean actress and poet; see Poetry Index
- Kempen**, Germany, birthplace of Thomas à Kempis, 1389
- Kempenland**, or Campine, Belgian sandy plain, 5848
- Kempis**, Thomas à; see Thomas à Kempis
- Kempton Park**, waterworks, 4508
- Ken**, Thomas, English writer of hymns, 1758, 1759
- See also Poetry Index
- Kendall**, Henry Clarence, Australian poet, 4205
- Kenilworth**, market town in Warwickshire, 6235, 963
- Kenmare**, Kerry, Mushroom Rock, 2007
- Kennedy Channel**, in Arctic, 6433
- Kennedy**, Edmund, Australian pioneer, 6069
- Kennel**, making one, and pictures, 756
- Kennet**, Lord; see Young, Sir Hilton
- Kenneth I**, Macalpine, Scottish chief who united Scotland in one kingdom, 596
- Kennington**, Alan, English sculptor, 4896
- Kensington Gardens**, London, Wren's Orangery, 6250
- Kent**, William, architect who designed the Horse Guards, Whitehall, 6470
- Kent**, south-eastern English county, ancient kingdom, 2398
- places in, 7182
- road map, 7110
- Kentish plover**, bird, in colour, 2898
- Kentucky**, American State, Abraham Lincoln's birthplace, 1644
- Anderson's Creek, 1644
- State flag, in colour, 6970
- tobacco plantation, 3693
- Kenya Colony**, British East African colony, 3315
- flag and emblem, in colour, 6968
- Makerere College, 3324
- native working in fields, 3319
- planting beans in Kikuyu, 3324
- maps, in colour, 7098-99
- map of industries, 3196-97
- map of physical features, 3198
- Kenya**, Mount, peak in Kenya Colony, East Africa, 6742
- Kepler**, John, German astronomer, 3492, 4713
- his study of Moon's craters, 3482
- diagram of law that led to discovery of gravitation, 4713
- Tycho-Brahe explaining globe to, 3490
- Kerb**, why has every pavement a kerb? 4639
- Kerensky**, Alexander, Russian republican leader, 5898
- Kerman**, Persia, city gate, 6395
- Kermanshah**, Persian town, 6385
- Kerner**, Anton, German botanist, on seeds produced by various plants, 6223
- Kerosene**, product of petroleum, 2967
- Kerr cell**, used in transmission of pictures, 1475
- Kerry**, county of Ireland, 3062
- Kerry blue terrier**, 668
- Kerry cattle**, characteristics, 1154
- picture, 1160
- Kestrel**, bird, flying powers, 3628
- feeding habits, 6855
- in colour, 3023
- South African, 3636
- speed of flight, 6852
- Keswick**, Cumberland, Southey died there, 2476
- Kethe**, William, Scottish Protestant divine and poet; see Poetry Index
- Kettle**, why lid jumps up and down, 3331
- what makes the kettle boil? 1175
- why does it not get red-hot? 5614
- why does the kettle sing? 5001
- why is a marble put into it? 681
- Kettle Holder**, how to make, with picture, 6175
- Kew Bridge**, over Thames, 6471
- Key**, Ellen, Swedish author and educationist, 4942
- Keyes**, Sidney, English poet, 4084
- Khafrā**, ancient Egyptian king, 6876
- sculpture, 3894
- Khalifa**, the Mahdi's successor in Sudan, 6878
- Khama**, Bechuana chief, 3312
- Khartoum**, capital of Anglo-Egyptian Sudan, 3316
- recaptured by Kitchener from the Mahdi, 6878
- Khatti**, site of ancient Hittite capital Boghaz-Keui, 6871
- Khayyam**, Omar; see Omar Khayyam
- Kherson**, Russian Black Sea port, John Howard dies there, 5450
- Khingang**, mountain range in Manchuria, 6511
- Khond**, tribe of Central India, 2072
- Khorsabad**, Mesopotamia, palace of Sargon, 6868
- Khotan**, city of Sinkiang, 6510
- excavations by Sir Aurel Stein, 6995
- Xhufu**, Egyptian king of Fourth Dynasty, 6876. See also Cheops
- Kiang**, animal of Tibet, 1900, 1895
- Kiangsi**, Chinese province, 6502
- Kiangsu**, Chinese province, 6500-02
- Kiaochow**, Chinese port, 6501
- seized by Japan from Germany, 6620
- Kibble**, William, part founder of Harrods Stores, 4109
- Kidney oxuria**; see Mountain sorrel
- Kidney vetch**; see Lady's fingers
- Kidneys**, blood partially purified by capillaries in, 1198
- Kidwelly**, old town in Carmarthenshire, Kidwelly Castle, view, 964
- Kiel Canal**, Germany, 7059
- Kielland**, Alexander Lange, Norwegian novelist, 4941
- Kier**, Samuel, American pioneer, petroleum discovery, and sale as medicine, 2963
- Kierkegaard**, Sören, Danish philosopher and writer, 4939
- Kiev**, historic city of the Ukraine, Russia's holy city, 5893
- bridge over the Dnieper, 6027
- Kikuyu**, Kenya, natives planting beans, 3324
- Kilauea**, active crater on the slopes of Mount Mauna Loa, Hawaii, 517
- Kilimanjaro**, highest mountain in Africa, in Tanganyika Territory, 3314, 6742
- temperature on, 2618
- picture, 3324
- Kilidini**, Kenya, has finest harbour on East African coast, 3315
- Killarney**, Lakes of, Three Irish lakes of Co. Kerry, 3082
- Brickeen Bridge, 3071
- Colleen Bawn rocks, 3070
- Meeting of the Waters, 3070
- Killer whale**; see Grampus
- Kill van Kull**, River, U.S.A., Bayonne Bridge, 554
- Kilmer**, Joyce, American author and editor, 1269, 4205
- See also Poetry Index
- Kiln**, in brick-making, 1791
- in pottery-making, 306
- Kilowatt**, -hour, definition; see units of electricity, 7071
- Kilpeck**, Herefordshire, Norman gate 719
- Kinchinjunga**; see Kanchanganga

- Kinck**, Hans E., Norwegian novelist, 4941
- Kindergarten**, Froebel's educational system, 4961
- Kindness**, do animals know when they are treated kindly? 440
- Kinetoscope**, Edison's invention, 6704
- King**, Australian explorer 6071
- King**, Harriet E.; see Poetry Index
- King**, power of English king subservient to Parliament, 4535
- speech on opening of Parliament, 4536
- King and the Abbot**, picture to poem, 6521
- King Arthur's Riddle**, story, 6815
- King Baby on his Throne**, picture to poem, 479
- King bird**, in colour, 3142
- King bird of Paradise**, in colour, 3264
- King condor**, bird, 3627
- King Cophetua and the Beggar Maid**, Burne-Jones's picture, 2548
- King crab**, its antiquity, 5472
- related to trilobites, 888
- China, 888
- King crow**, characteristics, 2894
- Kingdon-Ward**, Frank, British naturalist, 5578
- King Edward Building**, London: see Post Office
- King Edward VII Land**, 6552
- King Edward VII Plateau**, Antarctic tableland, 6554
- King eider duck**, bird, in colour, 3262
- Kingfisher**, characteristics, 3266
- feeding habits, 6855
- common species, in colour, 2899
- common, with nest and eggs, 3257
- common, with prey, 3257
- laughing and sacred species, 3255
- Senegal, in colour, 3264
- small racket-tailed, in colour, 3263
- King George the Fifth**, railway engine, in colour, 1043
- King Henry V**, story of Shakespeare's play, 6290
- King Henry VIII**, attributed to Fletcher under Shakespeare's supervision, 980
- King Indeed**, story, 660
- King John**, story of Shakespeare's play, 6289
- King Lear**, the story of Shakespeare's play, 1107, 6189
- Cordelia's appeal, 1106
- Lear renounces Cordelia, 1105
- King Midas**, story, 27
- King of Leinster's Story-teller**, story with picture, 1394
- King Oscar II Land**, 6556
- King penguin**, bird, with Gentu penguin, 4001
- King Richard II**, Shakespeare's play, the death of kings, quoted, 6533
- King's Bench Division**, 4775
- King's College**, Cambridge, arms, in colour, 4988
- King's College School**, London, arms, in colour, 4989
- King's guard**, puzzle, 4344, 4467
- King's harbourmaster**, flag, in colour, 6966
- King's jester**, puzzle, and picture, 4220, 4344
- Kingsley**, Charles, English novelist, 401, 3580
- on God making the world, 2225
- looking Westward Ho, 3581
- portrait, 399
- See also Poetry Index
- Kingsley**, Henry, English novelist; brother of Charles Kingsley: see Poetry Index
- King's Night of Terror**, story and picture, 81
- King's Old Friends**, story, 4612
- picture, 4613
- King's Speech**, debate on, and meaning of phrasing, 4537
- Kingston**, capital and port of Jamaica, 3554; harbour, 3562
- Kingston-upon-Thames**, Surrey, old coronation stone, 4863
- King's Watchers**, story, 3009
- Kingsway**, London, 5637
- King Who Came to Cashmere**, story, 904
- King Who Grew Kind**, fable, 6934
- King Who Was Loved**, story, 4966
- Kinkajou**, animal, characteristics, 792
- picture, 788
- Kinlochleven**, Argyllshire, river imprisoned in pipes, 5606
- Kinne Kulle**, hill in Sweden, 5156
- Kipling**, Rudyard, English author and poet, 3713, 4081
- as hymn writer, 1780
- portrait, 4077
- See also Poetry Index
- Kirby Hall**, Northamptonshire, 1952
- Kirghiz**, race of Central Asia, inhabit Sinkiang, 6511
- Kirghizia**, republic of U.S.S.R., 6014
- map, 5904
- Kirkby Lonsdale**, Westmorland, 6240
- Kirkham Abbey**, Yorkshire, 964
- Kirkstall Abbey**, ruins near Leeds of a splendid 12th-century monastery, 962
- painting by Thomas Girtin, 2423
- Kish**, excavation of royal palace there, 6871
- Kitchener of Khartoum**, Horatio Herbert, Earl, battle of Omdurman won by him, 3316
- exploration work in Palestine, 6988
- Sudanese conquered by, 6878
- Kitchen midden**, what does it mean in the history books? 5738
- Kite**, bird, food and habits, 3629
- in colour, 2898
- various species, 3627, 3625-6
- Kite** (aeronautical), Benjamin Franklin's lightning conductor, 5327
- how to make, with pictures, 4341
- wireless experiments with kites, 3363
- what makes them fly? 5244
- experiments with, 1843, 3361, 5322
- Kite-tailed tyrant bird**, 3147
- Kit's Coty House**, Kent, ancient British monument, 597
- Ki Tsze**, Chinese sage, founder of the Korean nation, 6624
- Kitten**: see Cat
- Kittiwake**, bird, 3998, 3997
- in colour, 3024
- Kiuprili**, Turkish leader at siege of Vienna, 6134
- Kiushiu**, Japanese island, 6617, 6618
- Kiwi**, bird, characteristics, 4370, 4367
- Kjelvik**, Norway, 5157
- Kjolen Mountains**, long mountain chain which divides northern Norway from Sweden, 5150
- Kladno**, iron and steel town of Czechoslovakia, 4554
- Klagenfurt**, Austria, rhinoceros and dragon-slaying tradition, 1773
- Klipspringer**, African antelope, 1400
- picture, 1401
- Klopstock**, Friedrich Gottlieb, famous German religious poet, 4697
- Knapweed**, member of Composite family, 4414
- black, flower, in colour, 4420
- great, flower, in colour, 5396
- great golden, flower, 6381
- Knaresborough Castle**, Yorkshire, 964
- Knee**, artery, at back of it, 1198
- liable to disease and why, 1695
- Knee-cap**, what and where it is, 1695
- Kneller**, Sir Godfrey, German portrait painter, 1928
- his portraits: Dr. John Wallis, 1926
- Duke of Marlborough, 1926
- John Gay, 1927
- Sarah Jennings, 1926
- Knife**, flint knife found near Gray's Inn Lane, London, 194
- how to clean, 256
- mystery of the suspended knife, 1991
- picture story of manufacture, 2910-11
- See also Table-knife
- Knight**, Joseph Philp, English composer of songs, 1264
- Knight**, Dame Laura, English painter, 2678
- Summer, painting by, 2674
- Women at War, painting by, 1943
- Knight motor-car**, early type, 4318
- Knight**, title given to chivalrous men of the Middle Ages, 3506
- passing of knightly ideals, 3508
- praying before altar, 3505
- Knight and the Wonderful Stone**, story, 784
- Knight on the Chessboard**, fable, 3624
- Knights and the Shield**, story, 286
- Knights Templars**, ancient church of, in the Temple, London, 720
- Knight's Ten Thousand Jewels**, story, 415
- Knitting**, simple stitches, with pictures, 3105
- how to knit mittens in three colours, 3229
- Knock Castle**, Ballater, 1338
- Knockholt Beeches**, near Sevenoaks, 2127
- Knockmealdown Heights**, Irish mountain range, 3061
- Knole House**, Kent, architecture, 6237
- Knossos**, city of ancient Crete, 795
- buried for 3000 years, 797
- Dorians demolish, 4024
- excavations, 6805, 6985
- palace of Minos once near, 322, 4023, 5380
- Minoan Palace**, 5383, 6991
- wall painting from, 323
- Knot** (bird), migration, 2642, 3876
- picture, 3875
- Knot**, forms of, 4463
- how the sailor ties his knots, 4463
- how to make a magic knot, with picture, 5684
- what was the Gordian Knot? 6101
- Knot** (in Heraldry), 926
- Knot grass**, not really a grass, 2186
- Knott, Ralph**, British architect, designer of the London County Hall, 4230
- London County Hall**, 6614
- Knotted Figwort**, description, 5892
- flower in colour, 6127
- Knotted wrack**, seaweed, 3415
- Knowledge**, love of knowledge leads the soul to God, 2973
- character not made by, 4279
- distance conquerable by, 745
- man's glorious destiny with knowledge as guide, 6547
- paper making in Europe in 14th century aided, 3759
- success in gaining knowledge the only worthwhile success, 2854
- sum of knowledge is relatively small, 863
- travel begins in search of, 3878
- Knowledge**, painting by Henri Morisset, 7218
- Literature and Arts**, painting by Puvion de Chavannes, 2973
- Seekers after Knowledge**, painting by Lucien Jonas, 2975
- Knowles**, G. Sheridan, English artist, Good King Wenceslas, painting, 3932
- Knox**, John, Scottish statesman, religious reformer, and writer, 7058
- on Geneva, 6725
- preaching before Mary Queen of Scots, 2554
- Koala**, animal, characteristics, 2391
- pictures, 2396, 2456
- Kobe**, port of Osaka, Japan, 6619
- Koch**, Robert, German physician, 699, 2624, 2623
- Kochanowski**, Jan., Polish poet, 5027
- Kohaku**, her offering, story, 2142
- Kohl-rabi**, vegetable, 2436, 2437
- Koibe's** culture, bird, 3635
- Koltsov**, Alexis, Russian poet, 4817
- Komensky**, John Amos, called Comenius, Czech theologian and educational reformer, 4552, 4960
- portrait, 4955
- Komsomolsk**, Russian "City of Youth," 6023
- Konenkov**, Russian sculptor, 4896
- Konig**, Frederick, German printer, 1518, 1517
- printing machine invented by, 1515
- Königsberg**, East Prussia, 4424
- Koops**, Dutchman who experimented in making paper from wood-pulp, 1294
- Kopts or Copts**: see Egyptians
- Koran**, Mohammedan Bible, 5086
- book of books in Arabic, 5677
- camel described in Koran as instance of God's wisdom, 1525
- in Eastern literature, 5673, 5677
- what is the Koran? 5866
- Kordofan**, Sudan, gum arabic trees, 2941
- Korea**, country of eastern Asia, 6624

Japan given protectorate of, 6620
 Russia threatens, 5898
 scenes, 6630
 map, general, 6625
 map, in colour, 7096
 map, natural features, 6519
 Korean sea-eagle, bird, 3636
 Kosciusko, Thaddeus, Polish patriot and general, 5027
 mound memorials, 5031
 Kosciusko, Mount, Australia, 2451, 2571
 Kossuth, Louis, Hungarian patriot, 896, 889
 Kouyunjik, site of ancient Nineveh, palace of Sennacherib discovered, 6870
 Kowarski, Dr., French scientist, heavy water, in atom experiments, 4814
 Kowloon, commercial centre of Hong Kong, 3426
 Krafft, Adam, German Renaissance stone-carver, 4644
 Krait, deadly Indian snake, 4620
 Krak, Prince, Polish legendary ruler, 5025
 Krakatoa, East Indian island lying between Java and Sumatra, 520, 4520
 Krakof : see Cracow
 Krasinski, Sigismund, Polish poet, 4486, 5029
 Kremlin, Moscow's medieval fortress, 6728
 seat of Supreme Council, 6018
 what is the Kremlin? 6728
 pictures, 5903, 6013
 Krenkel, E. T., Russian scientist, Arctic ice-floe experiments, 6444
 Kristin Lavransdatter, Norwegian historical novel, 4942
 Kruger, Paul, Boer leader in South African War; memorial at Pretoria, 3194
 Kruger National Park, Transvaal, lions and motorists in, 3182
 Krylov, Ivan, Russian writer of fables, translated La Fontaine's fables, 4816
 Krypton, gas, an element, 4222
 Kahattiya, warrior caste of Hindus, 6854
 Kuala Lumpur, capital of the Federation of Malaya, 3424
 Government buildings, 3423
 Kuban, Russia, Collective Farmers' club, 6029
 Kublai Kkan, Mongol emperor of China, Japan invaded by, 6618
 Marco Polo welcomed by, 771, 6503
 Kuching, capital of Sarawak, 3424
 Kudu, antelope related to eland, 1399
 picture, 1403
 Kum, Persia, Fatima's shrine, 6397
 Kumasi, Gold Coast, 3322
 Kumquat, fruit, what it is, 1814
 K'un-fu-tse : see Confucius
 Kuomintang, national party in China, 6504, 6510
 Kuprin, Alexander Ivanovitch, Russian writer, 4820
 Kuria Muria Islands, dependency of Aden, 3421
 Kurile Islands, volcanic chain stretching from Japan to Kamchatka, 6613
 taken from Japan by Russia, 6013
 map, 6625
 Kustenland, Italy absorbs Austrian province, 4548
 Kutab Minar Mosque, at Delhi, 5627
 carving on, 5634
 Kut-el-Amara, Iraq, siege of, 1709
 mosque, and street scene, 6275
 Kuwait, Arabian Sultanate on the Persian Gulf, 6266
 Kuwait, seaport capital of Arabian Sultanate, 6266
 Kuzbas, coalfield region of Russia, 6023
 Kwangsi, Chinese province, 6509
 Kwantung, Japan secures lease of from China, 6620
 Kwenlung, lofty mountain chain in China, Thibet, and Kashmir, 6500, 6510
 Kyanite, silicate of aluminium, 1303
 Kyles of Bute, Argyllshire, view, 349
 Kynance, Cornwall, coast scene, 843
 Kyoto, capital of Japan from 794 to 1809, 6622

Kysichoto, or Krasny, capital of Tannu-Tuva, an independent Mongolian republic, 6511

L

Laatokka, Lake, Finland : see Ladoga Lake
 Laban, father of Rachel, 748, 866
 Labat, French merchant, how he saved his son, story, 6932
 La Belle Jardinière, Raphael's picture, 823
 Laberius, Decimus, Roman poet and dramatist, 5427
 poem translated : see Poetry Index
 Labiate family of plants, 4544, 4782, 5022, 6011
 Labour, human effort by hand and brain, 5137
 division of labour, 5016
 International Labour Organisation and its work, 6487
 reward of labour, 5638
 Labour Bureaus, introduction of, 1706
 Labourer, Langland, on labourer of Middle Ages, 3638
 Labrador, territory of Newfoundland on the Canadian mainland, 3226
 Frohisher's voyage, 4600, 5206
 Labrador, dog, 670
 Labradorite, mineral, 1303
 La Brea, Lake, pitch lake, 6730
 Labuan, British island off the Borneo coast, 3425
 flag, in colour, 6967
 Laburnum moth, seen through microscope, 1911
 Laburnum tree, described, 4042
 with flowers and leaves, 4160
 Labyrinth, of King Minos, 322
 site of famous labyrinth of Herodotus discovered by Petrie, 6868
 Labyrinthodonts, description, 1260
 Lac, obtained from banyan tree, 3051
 Lacadaemon, founder of Sparta, 5372
 Lace, 6740
 Jacquard invents pattern-making loom, 5942
 Cluny lace, 6734
 Lace-bark tree, uses of bark, 2566
 Lacerated nitophyllum, seaweed, 3415
 Lacing fly, habits of larvae, 6458
 insect, in colour, 5713
 La Chance de Jacques le Simple, story in French, 5466
 Lachesis, one of the Fates, 3518
 directing man's actions, 6693, 6937
 Lachine Rapids, Canada, 770
 Lachish, archaeological discoveries at, 6983
 Lachlan, tributary of the Australian Murray in New South Wales, 6064
 Lac-insect, 5722
 Lackey moth, 4040
 moth and caterpillar, in colour, 5935
 La Condamine, discovered rubber in 1731 in Peru and Brazil, 1165
 La Condamine, town of Monaco, 6858
 Lacquer, Japanese, 6623
 Persian door, 71
 Lacrosse, how to play, 4218
 Lactalbumen, its value, 3651
 Lactic acid, what it is, 1931
 Ladder stitch, how to sew, with picture, 2580
 Ladoga Lake, largest lake in Europe, in north-west Russia, 5490, 5154
 Ladon, Greek river, story, 3530
 Lad Who Slept at his Post, story, 5216
 Lady Agnes of St. Dunstan's Tower, story, 2760
 Lady Amherst's pheasant, bird, in colour, 3263
 Lady-bird, protects roses, 6334
 use in Californian orchards, 5722, 6459
 eyed lady-bird, in colour, 6336
 great synoncha lady-bird, in colour, 6336A
 life-story, 6456
 Lady Cockburn and her children, painting by Sir Joshua Reynolds, 2052
 in colour, 2178
 Lady fern, in colour, 1799
 Lady of the College, Milton's nickname at Cambridge, 4480
 Lady of the Woods, name of silver birch, 3787

Lady's bedstraw, member of Bedstraw family, 2683
 flower, in colour, 4288
 Lady's fingers, or Kidney vetch, what it is like, 4416
 flower, in colour, 4419
 Lady's mantle, what it is like, 5518
 flower, in colour, 5521
 Ladysmith, town of Natal, South Africa, 3187
 oxen at work in, 3190
 Lady's Smock, or Cuckoo flower, 4415
 flower and seeds, 946, 4413
 Lady's tresses, plant, 5396, 5839
 Laelius, Caius (poet), Scipio's friend, 4352
 Laennec, René, French physician, 2504
 treating patient, 2503
 Laertes, character in Shakespeare's Hamlet, 6164
 Polonius's advice to, 6531
 La Farge, John, American painter, his paintings: Christ and Nicodemus, 3296
 Wolf Charmer, 3296
 La Farge, Oliver, American writer, 4335
 Lafayette, Joseph de, Marquis, French soldier and statesman, 650
 portrait, 647
 La Fontaine, Jean de, French writer, fables translated into Russian, 4816
 Lafrance, Jules, St. John as a boy, sculpture, 4651
 Lafresnaye's bee eater, bird, in colour, 3144
 Lagash, Babylonian city excavated by de Sarzec, 6870
 Lagerlöf, Selma, Swedish novelist, 4942
 La Gioconda : see Mona Lisa
 Lagos, capital of Nigeria, 3317
 La Grué et le Crabe Prudent, story in French, 6446
 Lahore, capital and railway centre of the Punjab, India, bazaar, 2956
 Lahore, slave boy of, story, 6574
 Laidlaw, Sir Patrick, theory on virus parasite, 4017
 Laius, King, killed by son, story, 6691
 Lajkonik, Polish festival, 5026
 Lake, the world's biggest lakes, 2494, 5490, 7059
 ancient European lakes, 1136
 plant life, 1066
 water power, 5606
 what is the pitch lake of Trinidad? 6730
 Lake District, North-western England, 215, 463
 Lake dwelling, model of prehistoric Swiss village in Berne Museum, 4666
 on South American rivers, 7001
 Lake of Bays, Ontario, 2497
 Lake Poets, Wordsworth, Coleridge, and Southey, 2471
 Laleham, Middlesex, intake for London's water supply, 4507
 Lalla Rookh, Tom Moore's poem, 3954
 L'Allegro, poem by Milton, 1232
 Lamalism, Tibetan religion, 6512
 La Mancha, Spanish plain, 5270
 Lamarck, Jean Baptiste de, French naturalist, 5573
 Lamartine, Alphonse Marie, French writer and poet, 4457
 realises truth of inspiration, 3958
 Lamb, animal: see Sheep
 Lamb, Charles, English essayist, poet, and literary critic, 2971, 2972, 2969
 See also Poetry Index
 Lamb, Mary : see Poetry Index
 Lambert, Maurice, English sculptor, 4896
 Lambeth Palace, early English Gothic work, 5871
 Lamb's lettuce : see Corn salad
 Lamennais, writer whose motto was God and Liberty, 4457
 Lamert, James, friend of Dickens, 2012
 Laminaria, seaweed, 3414-6
 Lammergerie, characteristics, 3632, 3633; speed of flight, 6852
 Lamont, Sir James, Arctic explorer, 6434
 Lamoricière, General, tomb in Nantes cathedral, 4648
 Lamp, why do some street lamps give a greenish light? 1300
 why has a doctor a red lamp at his door? 4520

Lampman, Archibald, Canadian poet, 4205
 Lamprey, fish, food and habits, 4982
 in colour, facing 5197
 Lancashire, north-western English county, 215
 cotton industry, 172
 why is it the cotton county? 6839
 places in, 7163
 road map, 7144
 Lancashire & Yorkshire Railway, engine, in colour, 1044
 Lancaster, Joseph, English educationist, 4962, 4955
 Lancaster, capital of Lancashire, arms, in colour, 4990
 Lancastrian, air liner, pictures, 433, 436
 Lancelot, sea creature, 42, 5347
 singly, and in chain, 5343
 Lancelot, Sir Hector's lament for, 369
 story of Sir Lancelot, 6942
 Lancelate spleenwort, in colour, 1799
 Lancelot, Nicolas, French painter, 1889
 his painting, La Belle Grecque, 3170
 Land, area and height compared with sea, 2125, 2495
 effect of height on temperature, 2618
 land holding under Feudal system, 3505
 Professor Marshall's definition, 5139
 use of rice-grass for reclamation of, 6724
 why do we hear better on water than on land? 312
 why is seaweed put on the land? 4642
 See also Earth
 Land crab, various species, 5475, 5477
 Landeau, Sandor, Prayer for Those at Sea, painting, 3097
 Lander, Richard, English explorer, 3000
 Landes, sandy district in south-west France, 2127
 peasant types, 4162
 shepherds on stilts, 4053
 Land iguana, on habits and home, 4495
 Landlord, meaning of the term, 5637
 Land Measure, 7069
 Land of Great Delight, story, 1148
 Land of Hope and Glory, poem written by A. C. Benson, 2972
 music written by Elgar, 1269
 Land of Nod, picture to poem, 5793
 Land of Red Daisies, story, 6447
 Landolphia, climbing plant, produces rubber, 2568
 Lander, Walter Savage, English poet and prose writer, 3956, 3953
 See also Poetry Index
 Land-rail : see Corncrake
 Landseer, Charles, Cromwell at Naseby, painting, 4005
 Landseer, Sir Edwin, English animal painter, 2544
 Nelson column, lions, 4228
 Monarch of the Glen, 2556
 Land's End, Cornwall, lighthouse and lighthouse at, 3167
 view of Cape Cornwall, 350
 view of cliffs, 1711
 Lane, Sir Hugh, collection of pictures in Tate Gallery, 2924, 2930
 Lanfranc, Archbishop of Canterbury, increased power of Church, 6920
 William the Conqueror's friend, 3150
 Langdale Pikes, Westmorland mountains, view, 472
 Langland, William, early English poet, 3638
 See also Poetry Index
 Langley, Samuel Pierpont, American inventor, 22, 21
 flying medal, 19
 Langley, Walter, English painter, paintings by him: cottage scene, 183, woman awaiting fisherman's return, 2601
 Langton, Stephen, his policy, 6922
 Language, beginnings, 6225
 brain centres for each language, 3049
 chief languages of the peoples, 7060
 code speech, 254
 cuneiform writings of ancient world, 6869
 European languages mostly Aryan, 2943
 hieroglyphics, of Egypt, 6596, 6860
 man's first use, 48
 number spoken in British Empire and Commonwealth, 2072
 are new words made for new things? 6355
 are there families in words? 563

how many words do we want? 61
 what language did Jesus speak? 4994
 where did the alphabet come from? 6857
 which are the most-used letters in the English language? 5736
 why do languages change as time passes? 6346
 why do the Swiss speak three languages? 5245
 will all the people in the world ever speak the same language? 2415
 Langur, monkey, first of the seven genera of Old World monkeys, 165
 capped, with young one, 162
 Lanier, Sidney, American poet and literary critic, 4205
 See also Poetry Index
 Lantern, how to make from paper, 6669
 from Siena, 70
 Lantern-fly, gives splendid light, 5721
 Brazilian and British types, 5719
 Lanthorn gurnard, in colour, 5098
 Laocoon, The, famous group of statuary, 4396, 4398
 Laocoon walnut moth, of Brazil, caterpillar, in colour, 6209
 Laomedon, Breaker of Promises, story, 6692
 Laon, historic city of northern France, cathedral, 5988, 5997
 Laos, State of Indo-China, 6512, 6513
 Laotze, Chinese philosopher, founder of Taoism, 5080, 6503
 leaving royal palace, 5079
 La Paz, city of Bolivia, 7019
 Indians and Legislative Palace, 7012
 La Pérouse, Comte Jean de, French navigator, rival of Captain Cook, 776, 2076, 2381
 portrait of the explorer, 2377
 Lapherus, Jourdan's, beetle, in colour, 6336A
 Lapis-lazuli, mineral, 1303
 Laplace, Pierre Simon de, invented calorimeter, 5566
 theory of nebula, 3356
 Lapland, territory inhabited by Lapps in the north of Norway, Sweden, Finland, and Russia, 5152
 Willoughby's death, 4600
 family group, 5147
 La Plata, wide South American estuary, 7003
 La Plata, town of Argentina, 7013
 Lappet, moth and caterpillar, in colour, facing 5935
 Lapwing, speed of its flight, 6852
 bird, in colour, 2768
 picture, 3875
 Larch tree, what it is like, 3789
 fruit, in colour, 3666
 with flowers and leaves, 3552
 Larche, Raoul, Violets, sculpture, 5258
 Lares et Penates, Latin for Household gods; used of household goods, 3520
 Large blue butterfly, with egg, caterpillar, and chrysalis, in colour, 6203
 Large emerald moth, and caterpillar, in colour, facing 5935
 Large-flowered bittercress, flower, in colour, 6130
 Large heath butterfly, or marsh ringlet butterfly, with egg, caterpillar, and chrysalis, in colour, 6208
 Large-jawed, flesh-eating beetle, in colour, 6336
 Large lyngbya, seaweed, 3415
 Large skipper butterfly, with egg, caterpillar, and chrysalis, in colour, 6203
 Large tortoiseshell butterfly, with egg, caterpillar, and chrysalis, in colour, 6206
 Large white butterfly, with egg, caterpillar, and chrysalis, in colour, 6203
 Large yellow-rattle, member of Figwort family, described, 4543
 flower, in colour, 4419, 4663
 Lark, family, characteristics, 3015
 crested lark, 3015
 Lark and her Young Ones, fable, 3866
 Larksurp, what it is like, 4543
 wild, flower, 4540
 La Rochelle, French fortified seaport on the Bay of Biscay, 5892, 6011
 Larsen, Henry, North West Passage voyage, 4607
 Lars Porsena, Etruscan soldier, 6988

Larsson, Carl, Swedish painter, 3398
 A self-portrait, painting by, 3404
 Larynx, sound production by, 3539
 air passage, regulation, 1320
 voice-box, 2540
 with vocal cords at rest, and producing sound, 3539
 La Salle, René de, French explorer in Canada, 770, 2318
 Lashio, town in Burma, 6509
 Lasso, how to make and use a lasso, with picture, 1989
 Lass of Richmond Hill, The, Frances l'Anson, 1265
 Last : see dry measure, and wool measure, 7069
 Last Fight in the Colosseum, story, 1393
 Last Judgment, The, Cousin's famous picture, in Louvre, 1882
 fresco by Michael Angelo in Sistine Chapel, Rome, 696, 4534
 Lastman, Pieter, Dutch artist, who taught Rembrandt, 1558
 Last Man, The, picture to poem, 2085
 Last Supper, The, Andrea del Sarto's fresco at Florence, 820
 Domenichino's painting at Rome, 936
 Leonardo da Vinci's picture, 688, 692
 Pictures of the Last Supper
 by Joseph Aubert, 4701
 by Leonardo da Vinci, 694
 by F. von Uhde, 4703
 Lat, column built by Buddhists in India, 5626
 Latakia, Syrian port, 6270
 Latent Heat of Steam, Dr. Joseph Black's book, 2746
 Latex : see Rubber
 Lathe, picture, 6352
 Latin, early literature in Latin, 5425
 international language of learning for many years, 4938
 Spain used it for centuries, 5055
 why are the names of plants written in Latin? 6354
 Latin America, general description and history, 6999
 Latini, Brunetto, Dante's debt to him, 4581
 Latitude, definition, 2618
 degrees of latitude, 4883
 La Tour, Quentin de, painter, 1889
 Latticed corklet anemone, in colour, 1553
 Latvia, republic of the U.S.S.R., 6016
 scenes, 6030
 map, 5904 ; in colour, 7091
 Laue, Max von, discoverer of crystal-analysis by X-rays, 2590
 Laughing Cavalier, The, Frank Hal's famous picture, 1424
 Laughing Jackass, Australian bird, 3266
 picture, 3255
 Laughter, exhaustion after much laughter explained, 2542
 why do I laugh and cry? 59
 why do we not laugh when we tickle ourselves? 1048
 two girls laughing, 59
 Laurel, cinnamon tree belongs to Laurel family, 2807
 fruit, in colour, 3668
 spurge laurel, 4778; in colour, 3665
 Laurencia, feather-like seaweed, 3414
 Lauricocha, Lake of, source of the Amazon, 7005
 Laurie Island, W. S. Bruce's winter quarters, 6556
 Lausanne, Swiss city near Lake Geneva, 4673
 Notre Dame Cathedral, 4667
 painting by Solomon J. Solomon, 3461
 Lava, like a honeycomb, 2005
 pours forth from Kilauea volcano, 517
 Lavatera, flower, 6384
 Lavender, oil acts as heat screen in dry climates, 1071
 common sea, flower, in colour, 5644
 spreading sea, flower, 5761
 Lavender bottle, how to make it, with picture, 2112
 La Verandrye, Sieur de, French explorer in Canada, 2319
 Lavery, Sir John, R.A., British portrait and subject painter, 2668
 his paintings, First Communion, 2672
 Lavoisier, Antoine, scientist, 6310

invented calorimeter, **5566**
 in his laboratory, **6315**
Law, Andrew Bonar, British statesman, **1826**; portrait, **1823**
Law, as supreme power, **4773**
 Alfred's laws, **2907**
 Babylonian enactments quoted, **428**
 children protected by special laws, **4903**
 Code Napoléon, **6726**
 Court of Chancery, **4774**
 English language used for laws in reign of Henry III, **840**
 how it protects us, **6256**
 International Court of Justice, **6478**, **6482**
 Justinian Code explained, **5616**
 lawyers' work, **4777**
 Magna Carta, the foundation of our Constitution, **836**
 Permanent Court of International Justice of League of Nations, **6482**
 Romilly reforms criminal law, **5448**
 terrible punishments formerly, **1942**
 trespassing laws, **4904**
 what does the law mean by an Act of God? **5367**
 what is a Common Informer? **6599**
 Justice of the Law, painting by Simmons, **3296**
 Power of the Law, painting by Blashfield, **3296**
 trial in days of King Alfred, **2907**
 See also Judge; Laws of Nature; Moral Law
Law Courts, London building designed by G. E. Street, **4230**
 exterior views, **4234**, **4773**
Lawes, Henry, musical composer, and friend of Milton, **1234**
Law lord, who he is, **4536**
Lawn tennis, how to play it, **3103**
Law officers, who they are, **4539**
Law of motion, Newton's first law, **3649**
Lawrence, Friar, character in Shakespeare's Romeo and Juliet, **6161**
Lawrence, of Bristol, sent first steamship from Bristol to London, **3736**
Lawrence, Sir Thomas, English portrait painter, **2176**, **5701**
 painting as a boy, **5695**
 portrait, **5691**

Pictures by Sir T. Lawrence

Boy with a Kid, **2059**
 Lady Gower, **2054**
 Mrs. Siddons, in colour, **2179**
 Warren Hastings, **2175**
Laws of Nature, Thales pointed them out, **913**
 working though unknown to us, **1982**
 See also Moral Law
Lawson, Cecil Gordon, English landscape painter, **2548**
Lawyer and the Oyster, story, **1762**
Lawyer and the Pears, fable, **3745**
Laxey wheel, measurement, **5969**
Layard, Sir Austen Henry, English archaeologist, excavator of Nineveh, **6870**, **6272**
Layer, Marney, Essex, Hall, **1086**
Lazarus, tomb, **3470**
Lazarus, died while seeking cause of yellow fever, **2627**
Lazuli bunting, bird, in colour, **3264**
Lazuli-daisy stitch, how to make, with picture, **2488**
Lazy tongs, picture, **6351**
lb. stands for pound (Latin, libra), **5006**
Leacock, Stephen Butler, Canadian writer, tribute to O. Henry, **4335**
Lead, atom, **4101**
 conductivity: see Heat conductors, **7073**
 melting point: see Melting points, **7073**
 production, **2074**, **2570**
 specific gravity of lead, **4954**
 weight of cubic foot, **7073-7074**
Lead, oxide of, use in electric accumulators, **738**
Leadbeater's cockatoo, **3499**
 in colour, **3261**
Leadbeater's opossum, **2390**
Leaden shot, how it is made, **5861**
Leader, B. W., his painting, Fast Falls the Eventide, **3656**
Lead, Kindly Light, story of hymn, **1760**
Lead pencil: see Pencil
Leaf, colour changes before falling, **336**

development of leaf-bud, **330**
 movements of leaves, **585**
 shaped so that light can reach it, **202**
 work it does for plant, **458**
 is a leaf waterproof? **3162**
 what happens when a leaf falls? **5367**
 why do leaves change colour in the autumn? **6106**
 why have leaves so many shapes? **1795**
 cells of a leaf, **329**
 different shapes, **6494**
 nine stages in development, **331**
 seen through microscope, **1910**
Leaf-cutter bee, building methods, **5841**
 cells in rotten wood, **5834**
 insect, **5839**
Leaf insect, protective colouring, **5718**
 picture, **5719**
Leafy liverwort, flowerless plant, **3408**
League, linear measure, **7069**
League of Nations, formation and failure, **4748**
 and Peace, **3834**
 formed in Paris, **2479**
 founded, **1824**
 Germany's entry, **4302**
 helps Austria, **4549**
 International Labour Office, **6487**
 lost opportunity, **4634**
 State of Western Asia, **6270**
 work for health, **6487**
 headquarters at Geneva, **4747**
Leah, married to Jacob, **866**
Leak in the Dyke, The, story, **6936**
Leamington, Warwickshire, planned housing estate, **1825**
Leap-frog, how to play, **6671**
Leap Year, why it has an extra day, **268**
Lear, Edward: see Poetry Index
Lear, King: see King Lear
Learning, patience the foundation of all learning, **2602**
Leather, story of manufacture, **3153**
 how to make a leather sucker, **2238**
 how to make things in leather, **6923**
 synthetic substitutes, **3153**

Pictures of the Leather Trade

bark containing tannin being ground, **3155**
 load leaving tannery in Cuba, **3160**
 Russian skins carted to tanneries, **3154**
 shoe manufacture, **5481**
 skins being treated, **3154-60**
 use in cricket-ball, **4262-63**
Leather buttons, why does a mattress have leather buttons? **4136**
Leather-jacket, larva of crane-fly, **6085**
Leathery thrips, insect, in colour, **5713**
Leathery turtle, reptile, **4497**
Lebanon, republic of Western Asia, **6270**
 and Security Council of Uno, **6480**
 what are the cedars of Lebanon? **3391**
 Cedar trees, **3393**, **3470**
 flag, in colour, **6974**
 general and political map, **6400**
 Kadisha torrent, **6271**
 wheat silos in Tripoli, **6271**
Le Breton, Gilles, designed château of Fontainebleau, **6360**
Le Brun, Charles, French court painter, **1684**
Le Brun, Madame Vigée, French portrait and landscape painter, **1690**
 Comte d'Espagnac, painting, **1686**
 Louise Adelaide de Bourbon, **3536**
 with her daughter, **1688**
Le Chevalier et la Pierre Merveilleuse, story in French, **5342**
Lecky, Sir William Edward, Irish historian, **3827**
Leclanché cell, electric, **483**, **480**
 electric battery, **1350**
Le Corbusier, Swiss architect, **6610**
 house at Garches, Paris, designed by, **6616**
Ledbury, old market town of Herefordshire, **6240**
 market house, **1085**
Lee, Sir Sidney, English author and biographer, **3828**
Leeds, chief centre of the Yorkshire cloth industry, arms, in colour, **4990**
 City Square, **1832**
 Kirkstall Abbey, **962**
 Civic Centre, **4409**
Leeds and Liverpool Canal, **4867**

Leeds Castle, Kent, gateway, **1591**
 view, **3637**
Leeds University, arms, in colour, **4989**
Leeuwenhoek, Antony van, Dutch scientist, **6955**
 looking through microscope, **1882**
Leeves, William, English poet and musician, **1265**
Leeward Islands, British West Indian colony, **3554**
 arms, in colour, **4985**
 Brimstone Hill on St. Kitts, **3555**
 flag, in colour, **6967**
 general and political map, **7030**
 map, in colour, **7103**
Lefevre, Albert, Grandfather, sculpture by, **5131**
Lefroy, Harold Maxwell, British scientist, **6086**, **6452**
Lefuel, French architect, work on the Louvre, **6370**
Leg, bones described, **1694**
 origin in Amphibian period, **10**
 bones of human leg, diagram, **1694**
 section of hip-joint, diagram, **1692**
Le Gallienne, Richard, British poet and writer, **2972**, **4081**
Legaré, James Matthew: see Poetry Index
Legend of the Goldfish, **6683**
Legends of Charlemagne, **6817**
Legends of King Arthur, **6941**, picture series, **6945-48**
Legends of the Stars, **5589**
Legends of Town and Country, **1149**
 See also subjects of Legends: Stories
Leghorn, Italy: see Livorno
Leghorn fowl, white, picture, **4253**
Legros, Alphonse, French painter and etcher, **2668**
Legume, what it is, **2431**
 in botany, **6495**
Leh, city of Kashmir, **6512**
Le Havre, west coast port of France, **4172**
Leibnitz, Gottfried Wilhelm von, teaching about optimism, **3459**
Leicester, Earl of, Spenser's patron, **749**
 portrait, **1077**
Leicester, capital of Leicestershire, arms, in colour, **4990**
 old town hall yard, **1836**
 view of municipal buildings, **7134**
Leicester shearing ram, picture, **1280**
Leicester sheep, characteristics, **1284**
Leicestershire, English Midland county, **214**
 places in, **7163**
 road map, **7134**
Leichhardt, Ludwig, German explorer, **6069**, **6063**
Leif the Lucky, reached Labrador and Massachusetts (1000 A.D.), **1014**
Leighton, E. Blair, painting, Evicted, **3780**
Leighton, Lord Frederick, English classical painter and sculptor, **2544**, **4768**

Paintings and Sculptures

Athlete and Python, **4653**
 Captive Andromache, **2555**
 Helen of Troy, **5305**
 Last Watch of Hero, **2549**
 Return of Persephone, **3522**
 Spirit of the Summit, **2555**
 The Sluggard, **4772**
Leighton Buzzard, Bedfordshire, woodland scene, **2373**
Leipzig, city of Germany, **4427**
Leipzig, battle of, known as the Battle of the Nations, **4297**, **4310**
Le Lorrain, Robert, French 17th-century sculptor, **4645**
Le Loup dan la Nuit, story in French, **6081**
Lely, Sir Peter, English portrait painter, **1928**

Pictures by Sir Peter Lely

Comtesse de Grammont, **1927**
 Duchess of Cleveland, **1927**
 Mary Davis, **1926**
 Nell Gwynn, **1927**
 Thomas Stanley, **1924**
Le Mans, old capital of Maine, France, architecture of cathedral, **5989**
 cathedral, apse, **5998**

- Lemberg, Poland:** see Lwow
- Lemercier, Jacques,** designed Pavillon de l'Horloge in Louvre, 6370
- Lemming,** migration of millions in search of food, 1035
- Norwegian animal,** 1033
- Lemon,** fruit is the seed, 1813
- northern limit reached in Spain,** 5407
- picked when unripe, 1814**
- as it grows, 1816**
- being gathered in Sicily, 1815**
- seeds, 333**
- Lemon sole, fish, in colour, facing 5098**
- Lemon thyme, 5521**
- Lemoyne, Jean Baptiste,** French sculptor, 4646
- L'Empereur et les Figues,** story in French, 4708
- Lemström, scientist,** investigates effect of aurora on vegetation, 238
- Lemur, animal first appearance on Earth, 2370**
- headquarters in Madagascar, 166**
- Galago, 164**
- ring-tailed, 164**
- Lena, Siberian river which flows into the Arctic, 6014**
- Le Nain, three French brothers, painters of rustic scenes, 1682**
- paintings, Peasants at Supper, 1686**
- Piper among the Hills, 1683**
- Lenbach, Franz von, German portrait painter, 3398**
- Lend-Lease, U.S. aid to Britain during Second World War, 1943, 3799**
- Lenepveu, Jules, Coronation of Charles VII, painting, 2257**
- scenes from life of Joan of Arc, 2257**
- Lenin, Russian Bolshevik leader, 5899**
- New Economic Policy (1921), 6018**
- Leningrad, formerly Petrograd, Russia, Falconet's spirited statue of Peter the Great, 4646**
- its white nights, 6014**
- Peter the Great builds, 5895**
- siege during Second World War, 5902**
- Pictures of Leningrad**
- cathedral of Resurrection, 5749**
- cathedral of St. Isaac, 6026**
- general view, 6026**
- Lenin Peak, in the Pamir range, 6014**
- Lenoir, Alfred, John the Baptist sculpture by, 4898**
- Lens, camera's lens, 4750**
- magnifying power, 1883**
- how lenses are made, 3888**
- moulding plastic optical lens, 4010**
- Lentil, valuable food, 2432**
- Leo I, Pope, defied Huns, 2156**
- Leo III, Pope, crowned Charlemagne emperor, 2522, 2524**
- Leo X, Pope, Michael Angelo works for him, 6185**
- Leochares, Greek sculptor, 4277**
- Leon, ancient capital of the former kingdom of Leon, Spain, 5270, 5994**
- Leonardo da Vinci, Florentine artist, engineer, and architect, 688, 6186**
- Botticelli's friend, 6878**
- compared with Rembrandt, 1559**
- Florence council hall decorated, 4730**
- on fossils, 3650**
- staircase in Château de Blois said to be designed by, 8359**
- tapestries by, 6738**
- shows model of his flying-machine to patron, 6187**
- statue at Milan, 4923**
- Pictures by Leonardo da Vinci**
- Madonna of the Rocks, 689**
- Mary, St. Anne, and Jesus, 689**
- Mona Lisa, 693**
- portrait of himself, 6183**
- The Last Supper, 694**
- Leonato, character in Shakespeare's Much Ado About Nothing, 6046**
- Leoncavallo, Ruggiero, Italian composer, 150**
- Leonidas, Spartan king and hero, 6389**
- at defence of Thermopylae, 3121**
- Leonides, meteor showers, 8608, 8730**
- Leontes, in Shakespeare's play, A Winter's Tale, 6051**
- Leopard, characteristics, 418**
- pictures, 422, 423**
- Leopard cat, picture, 424**
- Leopardi, Alessandro, Venetian sculptor, 272, 277**
- Leopardi, Count Giacomo, Italian poet and classical scholar, 4583**
- Leopard moth, and caterpillar, in colour, facing 5935**
- Leopard-tortoise, reptile, 4488**
- Leopold II, king of the Belgians, 6750**
- Leopold III, king of the Belgians, 5645**
- Leopold, Karl Gustav, Swedish poet, 4942**
- Leopoldville, capital of Belgian Congo, 6752**
- Lepanto, battle of, naval engagement between the Turks and the Holy League under Don John of Austria, 6134, 5781**
- Lepargé, Celine, French sculptor, 4648**
- Leper, Father Damien's work and death among lepers, 1142**
- in England in old days, 2920**
- Lepidodendron, in Devonian Age, 1136**
- Lepidoptera: see Moths and Butterflies**
- Le Prince, Louis A. A., cinema man, 6704**
- Lepsius, Karl Richard, made survey of Egypt, 6860**
- Le Renard et le Cheval Fidèle, story in French, 6569**
- Lermontov, Michael, Russian poet and novelist, 4817**
- Le Puy, city of France, scene, 4176**
- Le Roi qui arriva à Cachemire, story in French, 5582**
- Lerolle, H., his painting, The Birthplace of Jesus, 1665**
- Leros, island of the Dodecanese, Italy cedes it to Greece, 4909**
- Lerwick, capital of the Shetlands, on Mainland, general view, 1338**
- Lescot, Pierre, French architect, builder of part of the Louvre, 6360**
- Les Eaux-Bonnes, France, 4056**
- Leslie, Charles R., his paintings. Le Bourgeois Gentilhomme, 6072**
- Leslie, Countess, Raeburn's wife, 5696**
- Leslie, Shane: see Poetry Index**
- Lesse, Belgian river, 5646**
- Lesser auk, food and home, 4000**
- Lesser Bear, mythological story, 3519**
- Lesser black-backed gull, in colour, 3022**
- Lesser burdock, heathland flower, 5022**
- Lesser celandine, 4289, 6941**
- flower, in colour, 4288**
- Lesser convolvulus: see Field bindweed**
- Lesser periwinkle, what it is like, 4782**
- flower, in colour, 4906**
- Lesser redpoll, bird, in colour, 3021**
- nest and eggs, 2903**
- Lesser shrubby orach: see Sea purslane**
- Lesser skull-cap, what it is like, 5892**
- Lesser snapdragon, in colour, 4663**
- Lesser spotted globe-fish, picture, 5231**
- Lesser spotted woodpecker, bird, in colour, 3021**
- Lesser stitchwort, 5023, 6492**
- flower, in colour, 5144**
- Lesser water-beetle, in colour, 6335**
- Lesser whitethroat, bird, in colour, 2900**
- Lessing, Gotthold Ephraim, German poet, dramatist, and critic, 4697**
- Eight Little Fables by Lessing, 3624**
- on God and Truth, 494**
- portrait, 4695**
- Le Sueur, Eustache, French painter and sculptor, painter of twenty-two pictures of life of St. Bruno, 1884**
- Christ and Mary Magdalene, 1680**
- Letchworth, example of Town Planning, 6609**
- Lethe, river of forgetfulness, 3532, 6930**
- Letter, story of posting and delivering, 4627**
- why can we not send a letter without a stamp on it? 3651**
- See also Post Office**
- Letters, verses made with figures and letters, 506**
- Letton, John, first printer in the city of London, 1517**
- Lettuce, as salad from early times, 2434**
- acid, flower, in colour, 4287**
- cabbage lettuce, 2438**
- ivy-leaved, flower, in colour, 4906**
- Lever, three orders, 6349**
- Leverett, Sidney, rescues fellow-diver, story, 6935**
- Leverhulme, Lord, William Hesketh Lever, founder of the soap firm, 4109**
- portrait, 4102**
- Leverrier, Urbain J. Joseph, discovery of Neptune, 987, 3233, 3358**
- Lever scales, for weighing, 6352**
- Leviathan, Thomas Hobbes's great work, 4842**
- Lewes, ancient capital of Sussex, battle of Lewes, 840**
- arms, in colour, 4991**
- castle, barbaric, 1592**
- Lewis, Alun, British poet, 4084**
- Lewis, Cecil Day, British poet, 4083**
- Lewis, Clive Staples, English writer, 3831**
- Lewis, Sinclair, American writer, 4334; portrait, 4331**
- Lewis, northernmost and largest of the Outer Hebrides, 765**
- Lexington, American War of Independence began there, 3794**
- Leyden, Holland, ancient university, 5532**
- siege, 5528**
- town hall the finest in Holland, 6371**
- waterway, 5536**
- Leyden jar, electric condenser, 236, 235**
- invented by Musschenbroek, 5326**
- Sir William Watson improves jar, 5326**
- Ley Farming, what it is, 2683**
- Leys, Baron Hendrik, Belgian historical painter, 3399**
- Leys School, arms, in colour, 4939**
- Leyster, Judith, Merry Young Man, picture of, 3536**
- Lhasa, Tibetan capital, 6512**
- Palace of the Dalai Lama there, 6517**
- Lhermitte, Léon Augustin, French painter, a follower of Millet, 2792**
- Paying the Reapers, painting, 8777**
- L'Homme qui se rappela, story in French, 5953**
- Lia beetle, Graceful, in colour, 6336a**
- Liaotung Peninsula, Manchuria, 6511**
- Lias rocks, found on coast from Yorkshire to Dorset, 1505**
- Liberalism, the central force between Revolution and Reaction, 3833**
- Liberator, The, anti-slavery newspaper in America, 3245**
- Liberia, West Africa Negro republic, 6754**
- flags, in colour, 6974**
- map, in colour, 7098**
- Liberty, great creators of liberty, 889**
- what it means, 4207**
- sculpture by Dalou, 4209**
- statue in New York harbour, 3687**
- symbolical picture, 3832, 4207**
- Liberty Bell, what it is, with picture 6345**
- Library, first public library built by Caesar, 1536**
- Congress Library, United States, 3685**
- Cambridge University Library, 6614**
- Manchester Reference Library, 6611**
- Libya, North Africa, 6754**
- Italians defeated by Wavell's Army of the Nile, 1942**
- map, in colour, 7098**
- Licence duty, what it is, 4659**
- Licensing Bill, powers under, 1705**
- Lichen, half alga and half fungus, 3411**
- in Antarctic, 5980**
- life-story, 702**
- uses, 1440**
- kinds of lichen, 3408-9**
- Lichfield, city of Staffordshire, 5871**
- Samuel Johnson's birthplace, 1976**
- arms, in colour, 4991**
- pictures of cathedral, 1831, 5881**
- Lido, The, at Venice, 2599**
- Lie, Jonas, Norwegian novelist of seafaring life, 4941, 4937**
- Lie, Trygve, Secretary-General of Uno, 6479**
- Liebermann, Max, German painter, 3598**
- his painting, Preserve Makers, 3399**
- Liebig, Baron Justus von, German chemist, 5574, 6313**
- discovered chloroform, 4472**
- portrait, 5569**
- Liechtenstein, principality on the Upper Rhine, 6857**
- Liege, Belgian city on the Meuse, 5650**
- steps leading to citadel, 5654**

Liegnitz, Poland: see Lignica
Liepaja, port of Latvia, 6016
Lierre, town of Belgium, astronomical clock, 5649
Life, Earth filled by living things, 77
 affected by Earth's shape, 2127
 ancient type found in Australia, 2443
 appears on the Earth 36 million years ago, 10, 11
 egg or ovum the origin, 2516
 explorers of life, 5569
 first forms, 38, 199, 701, 827, 5006
 four great chapters of life, 329
 how to watch the unfolding of life, with picture, 6301
 making of the body, 451
 smallest forms of are microbes, 575
Sun essential, 201
 taking life for food, 2557
 water essential, 328, 830
 water its first home, 42, 325

Wonder Questions

can chemistry build up life? 6854
 did the people of long ago live longer than the people of today? 5128
 how long does an animal live? 6229
 what did first living things eat? 5006
 ladder of life, 79
 cycle of, 85
Lifeboat, pioneers of its building, 5950
Queen Elizabeth's have radio-telegraph equipment, 3574
 race for, story, with picture, 6193
 specially built to give low centre of gravity, 5075
 why does it not sink? 5738
Life, Death, and Judgment, Watts's painting in St. Paul's Cathedral, 2546
Life of Nelson, by Southey, 2476
Lift, first passenger lift, 6006
London's Underground lifts, 4376
Lift Bridge, at Middlesbrough, 556
Ligament, distinct from tendon, 1809
 support in standing, 1568
Light, modern scientific theories, 5690, 5815, 5936
 amount received by the planets, 7061
 different kind given off by every kind of atom, 1539, 3850, 5818
 due to movement in the ether, 4098, 4594, 5689
 electronic lighting of the future, 2718
 food for human body, 1429, 2182
 importance in art, 1426, 2789, 2924
 interference of light explained, 6353
 Newton's theory, 5689
 of stars and sun, 6116
 photographing its movements, 4756
 plants' growth retarded by, 585
 radiation pressure, 5816
 refraction explained, 4098, 5817, 5937
 relation to heat, 4099
 spectrum analysis, 5817
 speed estimated, 9, 4993, 5689
 does a light-wave go through glass? 684
 does light die away? 559
 has the Earth a light of its own like the sun? 922
 how do we know the speed of light? 4993
 how many waves are there in a beam of light? 8650
 is there a whiter light than that of the sun? 1300
 what is fluorescent lighting? 1299
 what is the blue light on the sea at night? 4520
 who is responsible for our coastal lights? 3166
 why does light go out in water, but flare up in paraffin? 3036
 why do moths fly round a light? 4640
 why do some street lamps give a greenish light? 1300
 spectrum, in colour, facing 3725
 See also Colour
Light-breasted Arctic skua, 3997
Lighthouse, Alexandria's wonder of the world, 4884, 6878
 authorities responsible for them, 3166
 Eddystone, 338, 350
 lamp turned by children, story, 6195
 Alexandria, 4888
 at the Needles, 337
 flags of lighthouses, in colour, 6966
 Godrevy lighthouse, near St. Ives, 347

guiding ship, 559
 Longships lighthouse, off St. Ives, 3167
 Mumbles, Swansea, 1460
Lightning, Benjamin Franklin's experiment with it, 5327
 caused by rain, 2868
 its power, 108, 238
 shape of flash, 2868
 where does lightning go when it reaches the ground? 4392
 why does it strike certain things? 2666
 why does lightning kill a man? 4136
Lightning conductor, Benjamin Franklin invents, 5327
 its use, 238, 2666
Lightship, authorities responsible for those round our coasts, 3166
 Seven Stones lightship, off Land's End, 3167
Light Sussex fowl, 4253
Light-wave, colour depends on number of waves, 561, 3650, 6845
 Sir Isaac Newton rejects theory, 5689
Light-year, astronomical term for the distance travelled by light in a year, 2995, 3726, 6546
 See also units of measurement, 7071
 explanatory picture, 3853
Ligier-Richier, French artist, 4644
Lignica, textile town of Poland, 5031
Lignite, varieties of, 2834
Ligny, battle of, 1458
Likes and Dislikes, game, 381
Lilac, relation of ash tree, 3787
Lilienthal, Otto, German pioneer of the aeroplane, 22; portrait, 21
Lille, centre of the French textile industries, 4170
Lily, Luther Burbank's experiments with, 6260
 section of bud under microscope, 1915
 liliun auratum, 6379
 Madonna lily, 6379
 Turk's cap, 6381
 Victoria Regia, 3053
Lily-of-the-valley, what it is like, 4780
 flower, 6382; in colour, 4905
Lima, capital of Peru, Pizarro founds it, 7000
 Government buildings and President's palace, 7015
Limasol, Cyprus, general view, 3435
Limbourg, Pol de, Flemish painter, 1058
 illuminated Book of Hours, 1051
Limburg, picturesque city of western Germany, architecture of cathedral, 5991
Limburg, province of Holland, 5531
Lime (alkaline earth), action of rain on, 642
 caustic, 4348
 in milk, 2183, 2308
 in yolk of egg, 2559
 of organic origin, 768
 proportion in sea water, 2495
 used in tannery, 3155
 weight of a cubic foot, 7074
 why does water boil when put on lime? 6227
Lime (citrous fruit), 1813
 used to resist scurvy, 1814, 2380
Lime, or Linden (tree), use of wood, 3788
 tree, leaves, and flowers, 3913
 winged seeds, 947
Lime hawk moth, and caterpillar, in colour, facing 5935
Limerick, capital of County Limerick, Ireland, 3067
 view, 3072
Limestone, formation of, 1011, 4856
 in carboniferous system, 1257
 oolitic, 1505
 silurian, 1009
 value to Britain, 2834
 weight per cubic yard, 2173
 varieties, 2004-06
Limestone polypody, fern, in colour, 1799
Limited Liability Company, what it is, 5140
Limoges, old capital of the former French province of Limousin, 4170, 6738
Limont, brown iron ore, 1304
Limosin, Leonard, famous painter of enamels, 6738
Limpet, characteristics, 5095, 6585

palate of, under microscope, 1910
 sucker of, 6577
 varieties of, 6577, 6581
Linarite, sulphate of lead and copper, 1304
Linchow, Chinese town, 6509
Lincoln, Abraham, American statesman, President of the United States in the Civil War, 1638, 3245, 3795
 soldier pardoned by Lincoln for sleeping on guard, 5216

Pictures of Abraham Lincoln

birthplace in Kentucky, 1644
 in hour of victory, 1645
 national memorial at Washington, 3688
 portrait of his stepmother, 1644
 portraits, 1644, 3791
 scenes of early life, 1644, 1645
 statue at Westminster, London, 1644
 waiting for the ending of the Civil War, frontis. Volume 7
 with his son, Tad, 1644
Lincoln, cathedral city and capital of Lincolnshire, 5871
 arms of the city, in colour, 4991
 castle, 1835
 cathedral, 1832, 5877, 5881
 Glory Hole, 1833
Lincoln College, Oxford, arms, in colour, 4988
Lincoln sheep, home of, 1284
Lincolnshire, second largest English county, 213
 places in, 7164
 road map, 7136-37
Lincoln's Inn, barristers admitted to practice, 4777
 gateway, 6252; library, 1220
Lincoln's Inn Fields, square designed by Inigo Jones, 4228
Lind, Jenny, singer known as the Swedish Nightingale, 5157
Linden: see Lime or Linden (tree)
Lindisfarne: see Holy Island
Lindisfarne manuscript, famous illuminated MS. in British Museum, 1923
Lindsay, Lady Anne, Scottish writer of songs, 1265
 See also Poetry Index
Lindsay, Robert Leiper, heroism at oil-well fire, 6914
Lindsay, Vachel, American poet, 4205
Linear Measure, 7069
Lined scallop, shell, 1177
Line Islands, British group in the Pacific, 3428
Linen, Flemish medieval manufacture, 5226
 Great Britain's export, 3068
 growth of manufacture in Stuart age, 1214
 Ireland's manufacture, 3068
Liner, building of big ships told in pictures, 2647-59
 interior pictures, 3703-10
 "Crossing the Line" ceremony, 3826
 launchings, 2658
 Queen Mary, construction, 2650-56
 Queen Mary in Trafalgar Square, artist's impression, 3817
 ring of a turbine-drum, 3211
Lines of force: see Magnet
Line-squall, what it is, 6721
Ling (fish), 37, 4858
Ling (plant): see Heather
Link: see land measure, 7069
Link belt and pulley, 6350
Link belt bucket elevator, 6352
Link-boy, what he did, 3647
Linklater, Eric, English novelist, 3714
Linley, Miss, Gainsborough's picture, 72
Linnaea borealis, what it is like, 4781
 flower, in colour, 4905
Linnaeus, Carolus, Swedish naturalist and botanist, 5572
 classification of plants, 6489
 his Lapland tour, 5157
 why he gave plants Latin names, 6354
 praying on heath, 5571
 resting in study, 6489
Linné, Karl von: see Linnaeus Carolus
Linnean Society, origin of, 5572
Linnell, John, his paintings: Noonday Rest, 5363
The Woodcutters, 3775

- Linnet**, food and plumage, 2901
nest and eggs, 2903
picture, 2892; in colour, 2900
Linotype, description of, 1518, 2404
explanatory pictures, 2045
Linsed, Argentina's great export, 7017
uses of the oil, 2584
Lint, bales of, 173
Linton, William James: see Poetry Index
Linz, Austrian city on the Danube,
general view, 4558
Lion, characteristics and food, 418
home of, 417, 2809
how fast can it run? 6852
in coat-of-arms, 4983
sensible to high-pitched sounds, 6181
stories of its fierceness, 418
tail has a spur at end, 2389
Assyrian lion hunt, sculpture, 3898
in ancient sculpture, 3891
in heraldry, 927
in modern sculpture, 4652, 4656
pictures, 40, 421, 423, 424
Roman sculpture, 722
Lion and the Bull, fable, 3992
Lion and the Bulls, fable, with picture,
4115
Lion and the Cat, story, 3495
Lion and the Deer, fable, 3992
Lion and the Unicorn, rhyme and pic-
ture, 5915
Lippi, Filippino, Botticelli's favourite
pupil, 6678
Lippi, Filippo, Florentine painter,
teacher of Botticelli, 574, 825
his Madonna adoring Child, 567
Lips, their functions, 1931
touch-bodies in them, 1433
Lipton, Sir Thomas, founder of famous
grocery firm, 4110; portrait, 4102
Liquid, molecule's behaviour in, 4101
specific gravity of liquids, 4954
can a liquid be compressed? 3648
Liquid air, its uses, 5319
heating properties, 5317
Liquid measure: see 7069
Liquorice, what it is like, 2691
wild: see Creeping rest-harrow
Lir, Children of, story, 6687
Lisbon, capital and chief port of Por-
tugal, 5402
captured from Moors, 5398
Pictures of Lisbon
airport scenes, 429, 5403
Praga do Commercio, arch, 5403
Praga do Commercio, square, 5397
view of aqueduct, 5414
west front of cathedral, 5403
Lisiewicz, T. W., his painting Suffer
Little Children, 4213
Lisle, Rouget, de: see Rouget de Lisle
Lisse, district of Holland, bulb fields,
5522
Lister, Joseph, Lord, English surgeon
and scientist, 2624
at work in surgery, 2625
portrait, 4134
Liszt, Franz, Hungarian composer, 150
portrait, 145
Litchi, fruit, in colour, 2688
Literary Club, formed by Dr. Johnson
and his friends, 1978, 5698
LITERATURE
The following are actual headings
of the chapters in this group;
the subjects dealt with will be found in
their proper places in the index
The Realm of Gold, 109
Poetry More Precious than Gold, 239
Our First Storytellers, 363
The Greatest English Book, 485
The Book as Sweet as Music, 613
The Poet who followed Chaucer, 739
A Shining Splendour Comes, 857
Shakespeare's Poems, 979
Shakespeare at his Height, 1101
Milton the Great, 1231
The Great Epic of Milton, 1355
John Bunyan and Daniel Defoe, 1477
Poets of a Dull Day, 1609
Swift, Addison, and Steele, 1729
The Diary Writers, 1849
Dr. Johnson and his Friends, 1975
Poetry Goes Back to the Country, 2101
The Master of the People's Songs, 2221
The Tellers of Tales, 2347
Wordsworth and his Friends, 2471
Byron, Scott, Shelley, and Keats, 2595
Scott and his Stories, 2719
Books of Dickens and Thackeray, 2847
The Writers of Essays, 2969
The Historians, 3093
Carlyle and Ruskin, 3215
The Fame of Alfred Tennyson, 3337
The Fine Story of the Brownings, 3455
Great Fiction in its Full Tide, 3579
Storytellers of Our Century, 3711
Modern English Prose Writers, 3827
Poetry Reaches the People, 3953
Poets of Yesterday and Today, 4077
English Poetry Over the Sea, 4201
English Prose Over the Sea, 4331
The Literature of France, 4453
The Literature of Italy, 4581
The Literature of Germany, 4695
The Literature of Russia, 4815
The Literature of Scandinavia, 4937
Literature of Spain and Portugal, 5055
The Literature of Greece, 5179
The Story of Homer's Iliad, 5303
The Literature of Rome, 5425
The Most Famous Roman Book, 5553
The Literatures of the East, 5673
Chaucer's Canterbury Tales, 5801
Stories from Spenser, 5919
Shakespeare's Comedies, 6039
Shakespeare's Tragedies, 6161
Shakespeare's Histories and Fantasies,
6289
Shakespeare's Sonnets, 6413
Passages from Shakespeare, 6529
Milton's Masterpiece, 6655
Bunyan's Pilgrim's Progress, 6781
Tennyson's Masterpiece, 6909
American contributions to, 4202, 4331
Australia's contribution, 4205
Canada's contribution, 4205
English literature founded on Alfred
the Great's work, 2908
English literature quickened by world
adventure in Elizabeth's time, 858
France's contribution, 4453
India's contribution, 4206
numbers of lines spoken by some of
Shakespeare's characters, 6849
South Africa's contribution, 4206
Literature and the Arts, painting by
Puvis de Chavannes, 2973
Litharge, in electric accumulators, 736
Lithium, an element, 4222
Lithium salts, used in fireworks, 3889
Lithuania, republic of the U.S.S.R.,
6018
converted to Christianity, 5206
scenes, 6030
map, 5904; in colour, 7091
Litmus paper, made from lichen, 1440
Little adder's tongue, in colour, 1798
Little auk, four million in a Spitsbergen
bay, 4000
Little Beaver, story and picture, 4113
Little Belt, Danish channel, 5148
Little Blacky-Tops, rhyme, music, and
picture, 6776
Little Boy Blue, picture, in colour, 403
Little Bo-Peep, rhyme, music, and pic-
ture, 5423
Little Brington, village green, 1834
Little Brown-paper Parcel, story, 6326
Little Crooked Man, rhyme picture, 6907
Little Dorrit, by Charles Dickens, 2848
Little earwig, insect, in colour, 3713
Little Entente, agreement between
Czechoslovakia, Rumania, and Yugo-
slavia, 4553, 4555
Little fern, in colour, 2898
Little Flowers of St. Francis, book
written by St. Francis of Assisi, 566
Little Goody Two-shoes, story and pic-
ture, 407
Little grebe, bird, in colour, 3023
Little Holland, Australia, so named in
former days, 2379
Little ivory cap, edible fungus, 3411
Little Miss Muffet, picture, in colour, 402
Little owl, picture, 3501; in colour, 3023
Little Pixies of Land's End, story, 1523
Little Poor Man of Assisi, 6809
Little Prince Horn, story, 1150
Little Red Riding Hood, story and pic-
ture, 899
picture, in colour, 403
Little Richard's Ride, story, 5465
Little skunk, or lesser skunk, 789
Little Spinner at the Window, story and
picture, 5705
Little Tom Tucker, rhyme picture, 232
Little Trianon, built for Marie An-
toinette, 5002
Little Wenham Hall, Suffolk, early
English manor house, 6236
Little Wooden Box, The, story, 4242
Livelong: see Orpine
Liver fluke, magnified section, 6827
Liverpool, port of Lancashire, 340, 6472
Bridgewater Canal helps its prosperity,
4866
cathedral, 5871, 6611
gas-lighting first adopted, 3334
Roman Catholic Cathedral, 6606
St. George's Hall, 6472, 6605
water supply source, 4505
Pictures of Liverpool
arms of city, in colour, 4991
arms of university, in colour, 4989
St. George's Hall, 1835, 6476
town hall, 4409
water supply at Vrynwy Valley, 4505
Liverpool and Manchester Railway,
George Stephenson's scheme, 2751
Liverpool Plains, Australia, pasture
lands, 6064
Liverwort, bryophyte, life-story, 702
where it grows, 8412, 5980
varieties, 3408
Lives of the Poets, by Dr. Johnson, 1975
Livingstone, David, Scottish missionary
and traveller, 3002
discovered Victoria Falls, 3002
explored Upper Congo, 3003
carried to his hut, 3001
working at loom, 2999
Livingstone, Northern Rhodesia, 3314
Livingstone's turaco, bird, in colour,
3262
Livorno, seaport of Italy, 4910
Livry, Roman historian, 5431
portraits, 1667, 5425
Lizard, characteristics, 4494
huge lizards of Jurassic Age, 646, 1508,
1756
in colour, facing 4469
varieties, 4492, 4493
Lizard, The, southernmost cape of
Great Britain, 765, 350, 765
Lizard Head, Rocky Mountains, 3808
Llama, origin and home of, 1533, 7019
picture, 1532
Llanberis Pass, 1461
Llandaff, cathedral city in Glamorgan-
shire, architecture of cathedral, 5872
Llandarcy, Wales, oil refinery, 3092
Llandudno, seaside resort in Carnarvon-
shire, Great Orme, 1462
Llanfairfechan, Carnarvonshire, 1460
Llanos, grassy prairies of South America,
in Venezuela and Colombia especially,
2127, 7006
Llewellyn, last Welsh Prince, 952
Lloyd George, David, 1824, 2133, 4539
portrait, 1705
Lloyd's Burgee, flag, in colour, 6966
Lloyd's signal stations, flag, in colour,
6966
Loach, fish, in colour, facing 5197
Load, hay and straw weight, 6069
Loanda, capital of Angola, Portuguese
West Africa, 6753
Lobelia, of Bellflower family, 4544
Lobster, family of, 5471
primitive types, 1009
why do lobsters turn red in boiling? 818
varieties, 453, 5477
Local Government, how it is carried on,
4407
rates levied by, 4660
Local Government Act, 1588
Local Government Board, 5458
Locarno Treaty, brought Germany into
the League of Nations, 4302
Lochinvar, Young, picture to Sir Walter
Scott's poem, 2707
Loch Killin char, fish, in colour, facing
5197
Lochner, Stephen, German painter, 1185
painting, Adoration of Wise Men, 1185
Lock, puzzle of the secret lock, 2362
Lock, on a canal, how it works, 4866
Bandak Nordsjo Canal, 4879

Caledonian Canal, 4866
Dordogne, France, 4878
Gota Canal, 4878
London-Birmingham Canal, 4878
Panama Canal, 4873
Welland Canal, 4877
Locke, John, English philosopher, 4034, 4844; portrait, 4837
Locke, William John, novelist, 3713
Lockout, what is it? 5040
Lockyer, Sir Norman, English astronomer, 3118, 3616
discovered helium in the Sun, 4223
portrait 3611
Locomotive: see Railway engine
Locust, ravages in Argentina, 7017
methods of destroying, 6451
plague in South Africa, 5718
pictures, 6461; in colour, 5713
swarm in Algeria, 6449
Locustae, in botany, 6495
Locust-tree, or False acacia, 4042
picture, 4037
Lodestone, key to electricity, 1347
origin of name, 359
Lodge, Sir Oliver, scientist, 314, 3362, 3359
experimental work on wireless, 2093
his definition of energy, 1814
Lodz, town of Poland, 5031
Loen, Norwegian tourist resort, 5150
Loepa Katinka, of Sumatra, caterpillar, in colour, 6209
Lofoten Islands, Norwegian island group, 5151
Loganberry, specimens, 1816
Logarithm, Napier invents, 6309
what are logarithms? 6974
Logwood tree, cultivation methods, 2939
flowers and leaves, in colour, 2686
Lohengrin, who was he? 6726
Loire, French river, 4109
Loki, in story of Iduna, 2888
Lollards, religious reformers in England led by Wycliffe, persecution of, 7054
Lombardi, Venetian family of sculptors, 272
Lombardi, Pietri, work in Venice, 6114
Lombards, invaded Italy, 4783
Lombard Street, name's derivation, 4783
Lombardy, northern Italy, 4910
Austrians driven out by Napoleon, 1442
Lombardy poplar, grows quickly, 3788
tree, flowers, and leaves, 4161
Lomond, Loch, largest and one of the most beautiful Scottish lakes, 1336
Lomonosov, Michael, Russian author and poet, 4816
London, Jack, American writer, 4334
London, capital of the British Empire and Commonwealth, 211
builders of old city, 4225, 6240
modern builders, 4225, 6470
Adam brothers and their work, 6471
Airways Terminal description, 429
burning of London by Danes, 580, 891
churches built by Wren, 6243
churches designed by Nicholas Hawksmoor, 6469
Gray's Inn rooms, 2764
Great Fire, 1212, 4227
Guildhall and its architecture, 6240
Holland House, Kensington, 6237
in Roman times, 5979
Inigo Jones's buildings, 4228, 6240
Law Courts, 6472
modern architecture, 6806, 6610-12
New Scotland Yard, 6473
places in, 7165
plague devastates; 1212
rainfall average, 5864
rebuild after Great Fire, 1212, 6243
rebuild by Alfred the Great, 894
Somerset House, 6471
subways, 4375
Underground Railway opened, 2756
weeds on bombed sites, 3180
Whitehall Palace, 6241
how did London begin? 5979

Pictures of London

Admiralty, 1217
Admiralty Arch, 1216
Airways Terminal, 430
Albert Memorial, 1222
arms, in colour, 4991

Arnos Grove Underground Station, 6613
Australia House, 6615
Francis Bacon's statue, 1222
Billingsgate Market, scenes, 5730
Blackfriars Bridge, 1221
bombed sites covered by wild plants, 3181
British Museum, 1216
Broadcasting House, 5111
Buckingham Palace, 1099, 1217, 6469
Bush House, Aldwych, 6252, 6615
Byron statue, 1222
Cenotaph in Whitehall, 1704
Chelsea Hospital, 6239
Cheyne Walk, Chelsea, 1220
Christ Church, Newgate Street, 6238
Cleopatra's Needle, 685, 1218
County Hall, 6614
Crosby Hall, 6246
Duke of York Column, 1218
Empire Swimming Pool, Wembley, 6613
flag, of the city, in colour, 6966
General Post Office, 4625
George V memorial, 1828
Greenwich Hospital, 6239
Griffin, Temple Bar, 1222
Guildhall, 4237
Heathrow airport, 436
Honor Oak water reservoir, 4510
Horse Guards, from parade ground, 6474
Houses of Parliament, 1221, 2723, 4535
Hyde Park, 1216, 1220
India House, Aldwych, 6614
Inigo Jones's Banqueting Hall, 4233
Inigo Jones's Water Gate, Adelphi, 1220
in Roman times, 5979
Kensington Gardens, Orangery, 6250
King's Bench Walk, 6246
Kingsway, 5637
Law Courts, 4234, 4773
Lincoln statue, Westminster, 1644
Lincoln's Inn gateway, 6252
Lincoln's Inn library, 1220
London Bridge, 1216
London Stone in Cannon Street, 4859
Marble Arch, 1220
Marlborough House, 6251
Middlesex Guildhall, 4237
Middle Temple gatehouse, 6238
Middle Temple Hall, 6246
Milton's statue, 1222
Mint, exterior, 3271
Monument, 1218, 6239
Morden College, Blackheath, 6239
Nelson Column, 1218, 6971
Newcastle House, Lincoln's Inn Fields, 6475
New Scotland Yard, 1217, 6607
Old Admiralty, 6476
Old Temple Bar, 4862
Peter Pan statue, Kensington Gardens, 2663
Piccadilly Circus, Underground station, diagram, 4379
Pool of London, painting by W. Wyllie, 5137
Post Office radio-telephone exchange, 2218
Prime Minister's house, Downing Street, 1217
R.I.B.A. Headquarters, 6615
Royal Exchange, 1215
St. Alban's church, Wood Street, 6238
St. Andrew by the Wardrobe, 6238
St. Andrew's church, Holborn, 6238
St. Augustine's, Watling Street, 6238
St. Bartholomew's, entrance, 1085
St. Benet's, Paul's Wharf, 6239
St. Bride's, Fleet Street, 6239
St. Clement Danes, 6238
St. Dunstan in the East, 6239
St. Edmund the King and Martyr, 6239
St. George's, Bloomsbury, 6474
St. James, Garlick Hithe, 6238
St. James's Palace, 6246
St. Lawrence Jewry, 6238
St. Magnus, 6239
St. Margaret Patten's, 6239
St. Margaret's, Lothbury, 6238
St. Martin-in-the-Fields, 4234, 6473
St. Martin's, Ludgate Hill, 6239

St. Mary Abchurch, 6238
St. Mary Aldermary, 6239
St. Mary-le-Bow, 6239
St. Mary-le-Strand, 6473
St. Michael's, Cornhill, 6239
St. Michael's, Paternoster Royal, 6238
St. Mildred's, 6238
St. Nicholas Cole Abbey, 6238
St. Stephen's, Coleman Street, 6238
St. Stephen's, Walbrook, 6238
St. Swithin's, Cannon Street, 6238
St. Thomas's Hospital, 1216
Saville Theatre, 6615
Saxons arrive at gates, 2643
Scott's statue, 1222, 6555
Selfridges, Oxford Street, 5755
Shell-Mex House, 1219, 4234
Somerset House, 4657
Southwark Cathedral, 1217, 5881
Stead memorial, 1222
Temple Bar, 6238
Temple church, 5882
Tower Bridge, 1219, 1413, 4236
Tower of London, 1217, 4236, 4869, 6247
Trafalgar Square, 1218, 4374
trained bands, flags, in colour, 6968
Unilever House, 6615
United Service Museum, 4233
University, 1216, 4238, 6605; arms, in colour, 4989
Victoria Embankment, 1219, 4234
Washington statue, Trafalgar Square, 1642
Waterloo Bridge, 1221, 6613
water-supply, 4503, 4507-10, 4512
Wellington's statue, 1222
Wesley chapel, 5446
Wesley's statue, 1222
West India Docks, 5261
Westminster Bridge, 1221
Westminster Cathedral, 4237
Wren's buildings, 6238-39
road map, 7111

See also names of buildings as
National Gallery; Westminster
Abbey; St. Paul's Cathedral.

London and North Western Railway, old engine, in colour, 1044
London and South Western Railway, old engine, in colour, 1044
London Bridge, crosses the Thames, 547
picture, 1216
rhyme, picture, and music, 2334
London, Brighton and South Coast Railway, old engine, in colour, 1044
London County Council, flag, in colour, 6966
London County Hall, headquarters of the L.C.C., 4230, 6614
Londonderry, city of Northern Ireland, 3068; arms, in colour, 4991
London Hospital, story of a parcel, 6326
London Midland Region, British Railways section, 3950
diesel-electric locomotive, 4075
London Pride, plan, 5519, 5521
London Transport Headquarters, Epstein's massive sculptures, 4768
London University, Bloomsbury, designed by Charles Holden, 4228
pictures, 1216, 4238
arms, in colour, 4989
Lonely Woman of Morocco, story, 1392
Long and Short stitch, how to make, with picture, 2610
Long Barrows, ancient earthworks in England, origin, 6997
Long-beaked spider crab, 5477
Long-beaked thin beetle, in colour, 6335
Long-eared bat, 290
Long-eared fox, 536
Long-eared owl, 3501; in colour, 2900
Longfellow, Henry Wadsworth, most famous American poet, 4202, 4201
See also Poetry Index
Long-fingered frog, 4743
Long-fruited ectocarpus, seaweed, 3414
Longhorn cattle, displaced in Ireland by shorthorn, 1154
pictures, 1160
Longicorn beetle, habits, 6334
in colour, 6336
Longitude, what it is, 680
Maskelyne's studies to determine, 3619

- Long Key Island**, Florida, palms on coast, 3807
- Long moss**: see Spanish moss
- Long Mynd**, Carding Mill Valley, Shropshire, 470
- Long-nosed jumping shrew**, 293
- Long pepper**, what plant is like, 2804
- Long-rooted cat's-ear**, member of Composite family, 5266
- flower**, in colour, 5394
- Longships Lighthouse**, off Land's End, 3167
- Long sight**, what is meant by, 3664
- Long-tailed duck**, 3752
- Long-tailed goral**, animal, 1280
- Long-tailed roller**, bird, in colour, 3264
- Long-tailed tit**, characteristics, 3020
- in colour**, 3023; nest, 3019
- Long-tailed whydah**, bird, 2904
- Lonk**, what is a lonk? 6109
- Lönrot**, Elias, Finnish scholar, The Kalevala, or Land of Heroes, 5153
- Looby light**, rhyme, picture, 2211
- Looe**, picturesque Cornish fishing port, view, 1711
- Loofah**, what is the loofah? 189
- Looking-glass**, why do we see ourselves in a looking-glass? 6839
- See also Mirror
- Loom**, used in cotton manufacture, 178
- Loosestrife**, genus *Lysimachia*, 6493
- flower**, 6009
- purple**, flower, in colour, 6130
- yellow**, flower, in colour, 6129
- Lord Chancellor**, chairman of House of Lords, 2300
- only judge chosen politically**, 4776
- Lord Chief Justice**, who he is, 4775
- Lord Mayor**, who he is, 4410
- Lord Nelson**, railway engine, in colour, 1042
- Lord of Charlecote Manor**, story, and picture, 2629
- Lord of the Lions**, story, 2017
- Lords and ladies**: see Arum, wild
- Lords Lieutenant of Counties**, flag, in colour, 6366
- Loredano**, Doge, Giovanni Bellini's portrait, 932, 72
- Lorelei**, River, Rhine's legendary enchantress, 4422
- Lorenzetti**, Pietro, one of the earliest Sienese painters, 568
- St. Francis and St. John**, picture, 565
- Lorenzo**, character, in Shakespeare's Merchant of Venice, 6042, 6533
- Lorenzo**, Firenze di: see Di Lorenzo
- Lorenzo the Magnificent**: see Medici Lorenzo
- Lorikeet**, or Lorikeet, home and characteristics, 3498
- species**, in colour, 3142
- Loris**, animal, 166, 164
- Lorna Doone**, Blackmore's novel, 3712
- Lorrain**, Claude, French landscape painter, 1682, 3286
- Embarkation of the Queen of Sheba**, painting by, 3172
- Port at Sunset**, painting by, 1683
- Lorraine**, old French province, French take it in 17th century, 4294
- restored to France after the First World War**, 1824
- See also Alsace
- Lory**, home and characteristics, 3498
- black-capped**, in colour, 3142
- Los Andes**, South American frontier town, 7018
- Los Angeles**, Californian city, 3677
- City Hall**, 3805
- oil gusher**, 3088
- Los Angeles rose**, flower, 6379
- Lost Chord**, The, music by Sir Arthur Sullivan, 1266
- Lost Prince Havelok**, story, and picture, 4363
- Lot**, Bible story of, 621
- Lotto**, Lorenzo, Venetian painter, 932
- Laura de Bolo**, painting by, 939
- Loughborough**, carillon at, 6231
- Louis VII**, king of France, fleur-de-lys adopted by, 4267
- Louis VIII**, king of France, England invaded by, 3920
- Louis IX**, St. Louis, king of France, 2251, 3920
- Joinville**, his historian, 4453
- dispensing justice, 2254
- portrait, 3917
- taught by Vincent de Beauvais, 2258
- with his mother, 2255
- Louis XI**, king of France, war with Charles the Bold, 5527
- sitting in peasant's home, 3921
- Louis XII**, king of France, tomb at St. Denis, 4173
- Louis XIII**, king of France, government, 3922
- portrait, with wife and son, 4133
- Louis XIV**, king of France, art during the reign, 1684, 4645, 6370
- his policy's effect on Revolution, 1332
- invasion of Holland, 5530
- summary of reign, 3922
- equestrian portrait, 3923
- portrait with parents, 4133
- Louis XV**, king of France, weak and luxurious government, 1332
- Louis XVI**, French king, 648, 4044
- outbreak of Revolution, 1332, 3924
- in prison with family, 653
- portrait, 647
- statue in St. Denis monastery, 5135
- Louis XVIII**, king of France, white fleur-de-lys flag revived by, 5736
- Louis Philippe**, king of the French, elected after 1830 Revolution, 4048, 5157
- tricolour flag restored by, 5736
- Louisiana**, American State, flag in colour, 6970
- Lourenço Marques**, port in Portuguese East Africa, 6753
- Louvain**, Belgian university city, church of St. Michael, 6371, 6369
- town hall, 5651, 5658
- Louvre**, The, masterpiece of Renaissance architecture in France, 6360
- what is the Louvre? 3392
- exterior, 4166
- Pavillon de L'Horloge, 6364
- Love apple**, name of tomato, 2432
- Love bird**, characteristics of, 3500, 3499
- Love in a mist**, flower, 6258
- Love-in-idleness**, Shakespeare's name for Heartsease, 4544
- Lovelace**, Richard: see Poetry Index
- Love Laughs at Locksmiths**, story, 34
- Lover**, Samuel, Irish novelist and writer of songs: see Poetry Index
- Love's Labour Lost**, Shakespeare's first play, 980
- Love Story of the World**, 5579
- Low Countries**, what are they? 5982
- Lowell**, Amy, American poet, 4205
- Lowell**, James Russell, American poet and literary critic, 4204, 4332
- portrait, 4201
- See also Poetry Index
- Lowell**, Percival, astronomer, 3616, 3611
- Lowestoft**, Suffolk, fishing fleet, 348
- fishing industry, 5724-29
- Loyal**, Ignatius de, or Inigo Lopez de Recalde, Spanish soldier and monk, 1390, 3760
- portraits, 1385, 3759
- L.s.d.**, origin of term, 5006
- Lubrication**, how a motor-car engine is lubricated, 4322
- Lucas**, Edward Verrall, English writer, 2972, 3829
- Lucas**, John Seymour, English historical painter, 2544
- Charles II** visiting Wren, 4225
- Louis XI** in peasant's home, 3921
- The Interval**, 3780
- Whip for Van Tromp**, 2554
- Luca**, city of northern Italy, St. Frediano Church, 5748
- Lucerne**, plant, description, 2188
- harvest in Canada, 2189
- Lucerne**, Swiss town on Lake Lucerne, general view, 4667
- St. Leodegar Church, 4667
- Lucerne**, Lake of, one of the most beautiful Swiss Lakes, 4666
- known also as Lake of the Four Cantons, 4670
- Lucian**, ancient Greek critic, 4272
- Luciana**, in Shakespeare's Comedy of Errors, 6041
- Lucifer** or Phosphorus, the morning star, 3518
- Lucilius**, Gaius, Roman satirical poet, 5427
- See also Poetry Index
- Lucknow**, Indian city in the United Provinces, famous buildings, 2821
- its siege, 2947
- picture to poem on its defence, 4797
- tomb of Zenab Aliya, 5636
- Luck of Simple Jack**, story, 1146
- Lucetius**, Roman philosophical poet, 4838, 5428; portrait, 4837
- Lucy**, Sir Thomas, punished Shakespeare for poaching, 2629, 4473
- Ludendorff**, General, German commander, 1709
- Ludgate**, London, Roman gate, 590
- Ludlow**, old market town in Shropshire, view showing castle, 1713
- Ludwig**, king of Bavaria, Wagner's patron, 150
- Luffa**: see Loofah
- Lugano**, city of Switzerland, scene, 4667
- Lugano Lake**, northern Italy, 4910
- Lugard**, Lord Frederick, British administrator in Uganda, 3315
- Luini**, Bernardino, Italian painter, 935
- Jesus** among the Doctors, picture by, 931
- Luke**, Jemima Thompson: see Poetry Index
- Luke**, St., account of storm on way to Rome, 6664
- announcement of Christ's birth to shepherds described, 3559
- portrait of Jesus attributed to him, 445
- Lukin**, Lionel, lifeboat pioneer, 5950
- Lutsch**, Professor, German sculptor, 4896
- Lullingstone Castle**, Kent, silkworm industry, picture series, 6092-94
- Lulworth Cove**, Dorset, view, 347
- Lulworth skipper**, butterfly, with egg, caterpillar, and chrysalis, in colour, 6208
- Lumière**, August and Louis, French scientists, Autochrome plate colour photography, 4754
- Luminous paint**, what is the secret of it? 5483
- Lumpfish**, or Lumpsucker, devotion to eggs, 5102
- in colour**, 5099
- Luna**, Moon goddess, 3518
- Lund**, ancient university city in southern Sweden, 5152
- cathedral, 5161
- Lung**, its work and shape, 1317
- blood purified in the lungs**, 1198, 1320
- cilia**, uses of, 1321
- evolved from swim-bladder**, 3407
- action of diaphragm**, 1317
- diagrams, 1319
- Lung-book**, scorpion's breathing mechanism, 5592
- Lung-fish**, 1136, 327
- Lupin**, flower, 6384
- Lupus**, treated by the Finsen lamp, 2628
- Lusaka**, capital of Northern Rhodesia, 3314
- Lusiads**, The, Camoens's work, 5059
- Lusitania**, ship sunk during the First World War, 1710
- Lussac**: see Gay-Lussac
- Lute Player**, painting by Etty, 2554
- Luther**, Martin, German religious reformer, 4293, 7054
- popularity of his hymns, 1757
- portraits, 1759, 4131
- Lutvins**, Sir Edwin, English architect, 4230, 6610
- Government Buildings**, New Delhi, designed by, 6614
- "Grey Walls"**, house at Gullane, designed by, 6607
- Lutzen**, battle of, fought in Saxony, 4294, 4310
- Luxembourg**, Paris, architecture, 6358
- pictures, 6364, 6365
- Luxemburg**, Grand-duchy bounded by Belgium, Germany, and France, 5652
- flag, in colour, 6974
- view, 5651
- map, in colour, 7086
- Luxor**, Upper Egyptian winter resort famous for its remains of ancient Thebes, 321, 5380, 6877
- wonderful temple, 5382, 5387

Luz, scene of Jacob's vision, 865
 Luzon, island of Philippines, 6514
 Lwow, town of Poland, 5030
 Lycia, ancient Greek town, 6987
 figures from Acropolis of Xanthos, 4032
 Lycidas, Milton's elegy, 1234
 Lycopodium powder, uses of, 3412
 Lydda, town of Palestine, 6269
 view, 3464
 Lydia, see map, in colour, of Ancient East, 7093
 Lyell, Sir Charles, Scottish geologist and scientific writer, 5574
 Lyme Regis, ancient port and seaside resort in Dorset, coast, 346
 fossil discoveries there, 1508
 Lyncus, king of Scythia, turned into a lynx, 6820
 Lynd, Robert, British writer, 2972
 Lynd, Sylvia, British poet and writer, 4084
 See also Poetry Index
 L ynghya, large, seaweed, 3415
 Lynmouth, Devonshire, views, 844, 1712
 Lynton, Devonshire, view, 1712
 Lynx, member of cat tribe, 419, 423
 Lyon office, Scottish college of arms, 4984
 Lyon rose, flower, 6382
 Lyons, Sir Joseph, a creator of industry, 4110: portrait, 4102
 Lyons, city of France, town hall, 6359, 6361
 Place Bellecour, 4179
 Lyre, forerunner of violin, 5614
 story of its invention, 4964
 Lyre bird, characteristics, 3148
 in colour, 3143
 Lyrical Ballads, poems by Wordsworth and Coleridge, 2473
 Lyrids, meteor shower, 3608
 Lys, River, in Flanders, 5646
 Lysander, in Shakespeare's *Midsummer Night's Dream*, 6294
 Lysenko, Trofim, Russian scientist, seed-vernacularisation process, 6023
 Lysias, Paul rescued by, 6539
 Lysicrates, Choragic Monument of, 5500, 5506
 Lysippus, Greek sculptor in bronze, a native of Sicyon, 4278, 4395
 Apoxyomenus, sculpture by, 4273
 Lyte, Henry Francis, Scottish writer of hymns, 1760: portrait 1759
 See also Poetry Index
 Lytton, Lord Edward Bulwer, English writer and poet, 3580: portrait, 3579
 See also Poetry Index
 L Z 130, German airship built for transatlantic service, 4452

M

Maas: see Meuse
 Maastricht, town of Holland, ancient gateway, 5538
 Mabuse, Jan, Flemish painter, 1058
 MacAdam, John Loudon, Scottish engineer, 2157
 his fine roads help development of England, 1584
 Macadamise, origin of word, 2158
 McAlpine, Sir Robert, founder of great firm of contractors, 4106
 portrait, 4102
 Macao, Portuguese settlement at the mouth of the Canton river, China, 5402
 Macaque, monkey, 164
 MacArdeil, James, Irish mezzotinter, 2426
 mezzotint of Peg Woffington, 2421
 Macaulay, Rose, English poet and novelist, 4084
 Macaulay, Thomas Babington, Lord, English historian, essayist, and poet, 3095
 contrasted with Gibbon, 3094
 Owen befriended by him, 5576
 standing on London Bridge, 3093
 See also Poetry Index
 Macaulay, Zachary, Scottish anti-slavery leader, 3244
 Macaw, bird, characteristics, 3500
 black and yellow, 3499
 blue and yellow, in colour, 3142
 hyacinthine, 3499
 red and blue, in colour, 3142

Macbeth, story of Shakespeare's play, 1107, 6166
 Macbeth, Robert Walker, Scottish painter and etcher, 2545
 Macbeth rose, flower, 6380
 Maccabaeus: see Judas Maccabaeus
 McCrae, John, Canadian poet, 4205
 See also Poetry Index
 MacDonald, George, Scottish poet and writer of fairy tales, 404, 3711
 portrait, 399
 See also Poetry Index
 MacDonald, Margaret Ramsay, monument to her in Lincoln's Inn Fields, London, 5136
 MacDonald, Ramsay, British statesman, 1826, 1828, 2138: portrait, 1823
 Macduff, character in Shakespeare's play *Macbeth*, 6169
 Mace, plant, 2804
 Macedonia, Huns lay waste its cities, 2154
 McEvoy, Ambrose, English portrait painter, 2668
 MacFlecknoe, Dryden's satirical name for Shadwell, 1610
 McGee, Thomas D'Arcy: see Poetry Index
 Macgillycuddy's Reeks, Irish mountain range, 3061
 McGregor: see McAdam, John Loudon
 Macgregor, Jessie, her picture, Jephthah's Daughter, 1363
 Machiavelli, Niccolo, Florentine statesman and political writer, 4583
 Machine, what machines are, 6348
 energy wasted as heat, 5442
 are all machines based on the same principles? 6348
 100 mechanical movements, 6349-52
 machine that issues railway tickets, 5369
 Machinery, division of labour increased by use of machinery, 5016
 electrical, in factories, 974
 first use causes unemployment in England, 1582
 industrial revolution begun, 4499
 labour saved by its use, 5758
 workers protected by law, 8255
 Machpelah, Cave of, burial-place of Abraham and Sarah, 624
 Macintosh, origin of name, 1166
 M'Yver, family, coat-of-arms, 927
 Mackail, John William, British scholar and writer, 3831
 on Lucretius, 5428
 Mackay, A. F., Antarctic explorer, 6554
 Mackay, Charles, Scottish writer of songs, 1264, 1261
 picture to his poem, *To a Young Genius*, 1719
 See also Poetry Index
 Mackennal, Sir Bertram, Australian sculptor, sculpture on Australia House, 5129
 Mackenzie, Sir Alexander, Scottish explorer, 4602
 journey across Canada, 2319
 Mackenzie, A. G. R., British Architect, Australia House, London, partly designed by, 6615
 Mackenzie, Alexander Marshall, British architect, designed Marischal College, Aberdeen, 6472
 Australia House, London, partly designed by, 6615
 Mackenzie, Compton, British novelist, 3712: portrait, 3711
 Mackenzie River, Canada's longest, 2194
 Mackerel, fish, shoal 50 miles in circumference, 5101
 picture, 5105: in colour, 5099
 Mackerel-sky: see Cloud
 McKinley, William, American president at time of Spanish-American war, 3796
 portrait, 3791
 Mackintosh, Charles Rennie, Scottish architect, 6611
 Glasgow Art School, designed by, 6607
 "Hill House," Helensburgh, designed by, 6607
 Macleod, Fiona: see Sharp, William
 Macleod, John, insulin discoverer, 3176
 Macleod, Norman: see Poetry Index
 MacIse, Daniel, his paintings: *Malvolio* and *the Countess*, 1106
 Peter the Great at Deptford, 5893

McMillan, William, British sculptor, 4898
 his sculpture, *A Dancer*, 4766
 McMurdo Sound, Antarctica, 6552
 MacNally, Leonard, Irish playwright and writer of songs, married the Lass of Richmond Hill and wrote the song, 1265
 MacNeice, Louis, British poet, 4084
 Macneil, Hermon Atkins, his sculpture, *Moqui Prayer*, 4656
 Macpherson, James, Scottish poet, 2101
 Macquarie River, Oxley traces, 6064
 Macrinus, Roman emperor, 2879
 Macropodilla, beetle, in colour, 6336A
 Macra shell, 6580
 MacWhirter, John, Scottish landscape painter, 2545
 Mad Tea-Party, story, 6076
 Madagascar, largest island in the Indian Ocean, 5400, 6750
 mother and child, 6748
 Sakalava girls, 6745
 street in Tamatave, 6760
 women making mats, 6748
 map, in colour, 7098
 Maddier, member of Bedstraw family, 2940, 5520, 6493
 Madeira, Portuguese island off the Moroccan coast, 772, 5402, 6752
 temperature, summer and winter, 2744
 Madonna: see Mary, mother of Jesus
 Madonna lily, 6379
 Madras, Indian city and port, 2820
 captured by French and ultimately surrendered to English, 2946
 ceded to England, 2076
 England establishes trading station in days of Great Moguls, 2945
 harbour, 2950
 Madrassi, his sculpture, *The Brother's Kiss*, 5258
 Madrazo, Frederico, Spanish painter, 3400
 his painting, *A Portrait*, 3402
 Madrid, capital of Spain, 5278, 5278
 church of St. Francisco, 6372
 Escorial and its beauties, 6372
 Pictures of Madrid
 Calle de Alcalá, 5286
 Casa de Ayuntamiento, 6362
 Columbus memorial, 5286
 Ministry of Public Works, 5286
 Prado museum, 5286
 Puerta del Sol, 5286
 Toledo bridge, 5286
 Madrigal, what is a madrigal? 4391
 Madura, city of southern India, shrine, lake of the Golden Lilies, 2815
 temples, 2953, 5081
 Madura, island of the Indonesian Republic, 5532
 Maeldune, voyage of, 6567
 Maelström, strong current, once thought to be a whirlpool, between two of the southernmost of the Lofoten Islands, Norway, 5156, 6104
 Mafeking, administrative centre for British Bechuanaland, 3312
 Mafrá, Portugal, monastery, 5412
 Magdala, Palestine, view, 3470
 Magdalen College, Oxford, arms, in colour, 4988
 Magdalena, river of Columbia, 7002
 at Barranquilla, 7011
 Magdalene College, Cambridge, arms, in colour, 4988
 Magellan, Ferdinand, Portuguese navigator, 774, 5410, 6514
 carried back to his ship dead, 775
 discovery of Pacific Ocean, 771
 Magellan Strait, connecting the Atlantic and the Pacific, 774
 Magenta, battle of, fought between the Austrians and the allied French and Sardinians, 4787
 Magenta (dye), made by Medlock and Nicholson, 4472
 Maggot, apple, with pupa and case, 6087
 Maggiore, Lake, northern Italy, 4910
 Magic Carpet, story and picture, 3133
 Magic Cauldron, story, 3994
 Magic fish, how to make, and picture, 6302
 Magician's jacket, conjuring trick, with picture, 5071

Magic knot, how to make, with picture, 5684
Magic matchbox, 753
Magic square, problem, 4096, 4220
Magic string, trick, and pictures, 3847
Magic Tinder-box, story, and picture, 3007
Magic touch, trick, 1000
Magic tumbler, trick, 3600
Magic writing, trick, with picture, 6671
Maginot Line, France, pierced by Germans in Second World War, 1941
Magistrate, at Petty Sessions, 4776
Magi's well, view, 3465
Magna Carta: see Great Charter
Magner, Michael, his heroic act, 2265
Magnesium, element, 4222, 4470
 in comets, 3606
 in sea-water, 2495
 in Sun, 3116
 plant which extracts it from sea-water, 3692
Magnesium limestone, and pictures, 2004, 2006
Magnet, magnetic forces described, 359
 electric magnet and its work, 973
 Canton makes the first, 5327
 horseshoe magnet in telephone, 1727
 lifting power, 106, 973
 lines of force, 360, 1351

Pictures

electric magnet at work, 361
 lifting huge ball, 361
 lines of force, 1351
 removing metal from man's eye, 853
 Sir J. J. Thomson, experimenting, 973
 unloading scrap-metal, 359
 with controlling machinery, 976
 See also Magnetism
Magnetic field, 360
Magnetic meridian: see Meridian
Magnetic North: see under Pole
Magnetic Poles: see Pole
Magnetism, mysterious force not yet understood, 359
 discovery of magnetism, 105
 Earth's magnetism influenced by sun-spots, 3114
 Earth's properties shown by Gilbert, 6309
 electricity and magnetism, 1347
 Oersted's discoveries, 482
 residual, 974
 does magnetism wear away? 4763
 See also Magnet

Magnetron valve, in radar, 2468
Magnet-stone: see Lodestone
Magnifying glass, how it enlarges, 3283
Magog: see Gog and Magog
Magpie, characteristics, 2770
 in colour, 2899, 3262
Mahabharata, great Indian epic, 5674
Mahdi, Sudanese religious leader, 6878
Mahé, largest island of the Seychelles, 3421
Mahlon, son of Naomi and Abimelech, settled in Moab, 1617
Mahmud, Afghan leader, 6390
Mahmud of Ghuzni, first Mussulman king of India, 2944
Mahogany, tree, what it is like, 2789
Mahrattas, England's wars with, 2947
Maia, goddess, daughter of Atlas, 5337
Maidenhair fern, species, 1798-1800
Maidenhair tree, 705
Maid of Norway, 894, 952
Maidstone, county town of Kent, arms, in colour, 4991; old palace, 1591
Mail: see Post Office
Mailbag, cost of Britain's, 4626
Mail coach, what the first was like, 4626
Mailloil, Aristide, French sculptor, 4896
Main, chief German tributary of the Rhine, 4422, 4426
Maine, American State, flag, in colour, 6970
Mainz, Mayence, German city, architecture of cathedral, 5746
 Gutenberg born there, 1511
 cathedral, 5754
Maison Carrée, Nîmes, 5507
Maisons-Lafitte, Château de, French country house, 6358
Maize, food plant, 1435, 1702
 food value, 2429
 cereal grown for food, 1696

cultivated and wild varieties, 1203
 plant, in colour, 2686
 See also plant life maps under names of countries
Majano, Benedetto da: see Da Majano
Majolica plate, specimens, 70, 6736
Majorana, Major, wireless telephony pioneer, 3364, 3359
Majorca, largest of the Spanish Balearic Islands, Majolica ware takes name from it, 6737
Makalu, Mount, height, 5620
Makerere, Kenya, college, 3324
Making up the Donkey, game, 3472
Makurdi, Northern Nigeria, bridge over Benue River, 555
Malacca, Federation of Malaya, 3424
 Town hall square, 3435
Malaccan ant, nest, 5965
Malachite, mineral, 1301
Malaga, port in southern Spain, 5278
 architecture of cathedral, 6372
 general view, 5285
Malar, Lake, Sweden, 5152
Malaria, disease, 2626, 6084
 Fijians only Melanesians free from it, 3426
 Gorgas's successful fight against it at Panama, 4869
 Uno aid, 6487
 anopheles under microscope, 1916
Malaya, Federation of British Territory, 3423
 tin production, 2074
 Chinese tea-seller, 3434
 Government buildings at Kuala Lumpur, 3423
 Malacca, Town Hall, 3435
 native and bullock in paddy field, 3432
 pepper plantation, 2803
 rubber plantation scenes, 1171, 1173-74
 village near Pekan in Pahang, 3434
 map, in colour, 7097
 See also Federated Malay States and Straits Settlements
Malayan tapir, animal, 1771
Malay bear: see Bruang
Malay cobra, snake, 4615
Malay fox bat, 290
Malay Race, true ancestors of the Japanese, 6617
Malay States: see Federated Malay States, Straits Settlements, and Malaya
Malcolm, character in Shakespeare's *Macbeth*, 6168
Maldiv Islands, dependency of Ceylon, 2813
Male fern, spore case bursts, 946
 in colour, 1797
Male shield fern, life-story, 833
Malines, Belgian town, 5526
St. Rombau Cathedral, 5654
Mallard, wild duck, 3754
 in colour, 2766
Mallarmé, Stéphane, French poet, 4458
Mallet, David: see Poetry Index
Mallow, what it is like, 4544, 5023
 marsh: see Marsh mallow
 seaside members of family, 5764
 flower, 4541
 flower, in colour, 5396
 musk mallow, flower, in colour, 4417
 tree mallow, flower, in colour, 5643
Malmgren, Dr., Swedish scientist, his Arctic flight, 6444
Malmo, Swedish city and port, 5152
Maloja Pass, Alpine highway leading from the Swiss Engadine into Italy, picture, 2130
Malope, flower, 6379
Malopolska, industrial town of Poland, 5030
Malory, Sir Thomas, Welsh author, 363, 366, 6041
Malpighi, Marcello, Italian scientist, 1883, 5570, 1885
Malraux, André, French writer, 4458
Malt, what it is, 1440
Malta, British Mediterranean island, 3418
 archaeological discoveries, 6986
 capture by Napoleon, 1453
 George Cross won in Second World War, 1942
 dwarf elephants of, 2028
 St. Paul wrecked, 6665

flag, in colour, 6966
 aqueduct, 3431
 family outside house, 3429
 French surrender to British, 2077
 from the Baracca, Valletta, 3431
 girls weaving baskets, 3431
 milking goat on doorstep, 3431
 Valletta, Grand Harbour, 3431
Malte-Brun, Conrad, Danish geographer, 5163
Maltese Cross, used for Red Cross, 5620
Maltose, what it is, 1698
Malvern Hall, Constable's painting, 2303
Malvern Hills, between Worcestershire and Herefordshire, 468
 view from Worcestershire Beacon, 470
Malvolio, character in Shakespeare's *Twelfth Night*
 painting by Daniel Maclise, 1106
Mamelukes, Egypt's alien rulers, 6878
Mammal, age of mammals, 1756
 bat an early type, 291
 development, 44, 4490
 egg-layers originally, 2516
 first appearance, 11, 44, 1508
 highest order of animal, 455
 origin of word, 2337
 pigmy shrew the smallest, 296, 2021
 sea-creatures' characteristics, 905
 sprang from amphibia, 454
 place in scale of life, 79
Mammato-cumulus, clouds, 2871
Mammoth, bodies preserved for 100,000 years in Siberia, 2028
 Pleistocene Age animal, 1881
 primitive drawing, 192
Mammoth aster, flower, 6384
Man, beginning of his story, 45
 how he built himself a house, 167
 rise from savagery, 297
 when he first thought of God, 543
 value of the common man, 3757
 adaptation with regard to food, 2568
 advanced by virtue, 1735
 appears in Pliocene Age, 1877, 1880
 a social animal, 6373
 born to inquire after truth, 493
 brain distinguished from animal's by association fibres, 2934
 brain larger than woman's, 1693
 climatic influence, 2621
 decoration attempted early in history, 796
 destiny, with knowledge and science as his guides, 6545
 development of certain men beyond their age, 674
 differences in men possibly due to variations in ductless glands, 3176
 divine faculty of vision, 1361
 divinity seen in self-sacrifice, 1854
 first appearance on Earth, 11, 646
 how his body is built up, 1568, 3332
 importance of trees to man, 3350
 liberty of man, 4207
 mammals and early man, 1151
 mind of man made up of reason and instinct, 3586
 Nature's energy directed by him, 1616
 precariousness of his life, 3098
 skull's most important part, 1691
 source of life in common with the Primates, 159
 temperature constant, 1527
 thoughts directed inwards by Ezekiel and outwards by Thales, 913
 truth essential to his safety, 1733
 upright walk and centre of gravity, 5074
 work *Man* in his search for truth, says Lessing, 494

Wonder Questions

can man live and work at the North Pole? 2414
 can man make rain? 3395
 what is the missing link? 2539
 why is a white man more civilised than a black man? 6729

Pictures of Man

between civilisation and savagery, 297
 climbs up the hill, 48
 cooking food at a fire, 1881
 drawings by Cave Men, 191-3, 195, 198
 Galley Hill man, head, 3047
 people of ten thousand years ago, 299
 Piltown man, head, 3047

prehistoric man making a fire, 167
 prehistoric man scratching picture on bone, 197
 skeleton compared with elephant's, 3163
Man, Isle of, British island in the Irish Sea, 385
 seen from the sea, 340
 flag, in colour, 6966
Manager, his work and reward in industry, 5638
Manakin, bird, characteristics, 3146
 common, 3147
 orange-headed, in colour, 3263
 yellow-fronted, in colour, 3141
Man and his Negro Servant, fable, with picture, 3865
Man and the Forest, fable, 4115
Man and the Partridge, fable, 3866
Manaos, Brazilian river port near the junction of the Rio Negro with the Amazon, general view, 7010
 opera house, 7010
Manasseh, Israelite tribe, 1244
Manasseh, king of Judah, 2979
Manatee, sea mammal, 2145, 2151
Manchester, commercial capital and centre of the cotton trade of Lancashire, 4499
 architecture of cathedral, 5874
 building of Bridgewater Canal, 4866
 Reference Library, 6614
 Rylands Library, designed by Basil Champneys, 6472
 town hall, 2547, 6472

Pictures of Manchester

arms, in colour, 4991
 cathedral, views, 1836, 5880
 Reference Library, 6611
 Ship Canal, scenes, 4882
 square scene, 1833
 town hall, 4409
 university arms, in colour, 4989
Manchu Dynasty, last imperial dynasty of China, 6504, 6511
Manchuria, or Manchukuo, vast territory lying to the north of China, 6500, 6504, 6511
 Japan invades China from, 6509, 6512
 made the puppet state of Manchukuo by Japan, 6511, 6621
 Russia occupies it, 5898
 tigers of Manchuria, 418
 flag, in colour, 6974

Maps of Manchuria

general and political, 6520
 in colour, 7096
 physical features, 6519
Manchurian crane, bird, 3873
Mancini, Antonio, in the Customs House, painting by him, 3658
Mandarin duck, bird, in colour, 3263
Mandated territory, territory administered under mandate of the League of Nations, 4749, 6262
M and B 693, see Sulphapyridine
Mandrake, member of same family as Tobacco plant, 2942
Mandrill, animal, 164
Maned wolf, characteristics, 540
 picture, 536
Manes, classical name for spirits of the dead, 3519
Manet, Edouard, French painter, 2924
 his paintings, The Balcony, 2922
 Firing Party, 2925
Manetho, historian of old Egypt, 6878
Man from the Other World, story, 1520
Mangabey, white collared monkey, 161
Manganese, production, 2074
Mangel-wurzel, or mangold-wurzel, member of Spinach family, 2436
 descended from sea beet, 5762
 food for animals, 2188
Mangeria, crimson, seaweed, 3414
Mangle, why is the screw of a mangle loosened after use? 5864
 why are the spokes of a mangle wheel curved? 4891
Mango, fruit, in colour, 2688
Mangold-wurzel: see Mangel-wurzel
Man Grove tree, method of growth, 3056
Manihot glaziovii, tree, 2568
Manila, largest city of Philippines, 6514
 General Post Office at, 6516

Manila hemp, what it is, 2564
 obtained from banana leaf, 1818
 industry, pictures, 179
Man in a Monk's Habit, story, 3135
Man in the Engine-room, story, 6822
Man in the Moon, legend, 1149
Manioc, food value, 1436
 plant, in colour, 2685
Manitoba, Canadian province, 2196
 soil enriched by worms, 6829
 soil prepared for cultivation by rodents, 1030
 arms, in colour, 4985
 field of red clover, 2187
 flag, in colour, 6967
 Parliament Buildings, Winnipeg, 2330
Mann, Thomas, German writer, 4700
Mannheim, German chemical and dyestuff manufacturing centre, 4422
Manning, Henry Edward, Cardinal, English divine, portrait by G. F. Watts, 2551
Man-of-war bird: see Frigate-bird
Manor, English manor houses and their development, 6236
Mansard, or Mansart, François, French architect, 6370
Mansfield, Katherine, British writer, 4335; portrait, 4331
Mansfield Park, novel by Jane Austen, published in 1814: see page 2350
Manship, Paul, American sculptor, his sculptures: Dancer and Gazelles, 4649
 Diana the Huntress, 4653
 Man hunting Stag, 1613
 Playfulness, 4897
Mansion, Colard, Caxton's printing partner in Bruges, 1516
Mansion House, London, 4230
 exterior, 4235
Manson, Sir Patrick, British physician and parasitologist, 2623
Mansura, town of Egypt, 6873
Mantegna, Andrea, Italian painter, 931
 Bramante trained under him, 6111
 St. George, painting by, 940
Mantineia or **Mantineia**, battle of, 5781
Mantle, mussel's mantle explained, 1176
Mantua, fortress of northern Italy, church of St. Andrea: fine example of Renaissance architecture, 6110
 Del Tè Palace, 6111
 Mantegna's wonderful frescoes, 931
 surrender to Napoleon, 1442
Manu, ancient Indian law-giver, 2810
Manuel II, last king of Portugal, 5400
Manufacture, plants that help in, 2937
Manure, why does manure make a plant grow faster? 4764
Manuscript: see Illumination
Manuzio, Aldo, Italian pioneer of printing, 1517; portrait, 1517
Man who did Not Forget, story and picture, 657
Man who Died for Maximilian, story and picture, 4609
Man who Drove Downstairs, story and picture, 4243
Man who Gave Up Singing, fable, 3744
Man who Kept His Word, story, 2287
 picture, 2264
Man Who Made Trees to Blossom, story, 904
Man who Refused a Bribe, story and picture, 4951
Man who Saved His Son, story, 6932
Man who Thought of His Comrades, story, 6322
Man who Waited to be Fed, fable, 6934
Man who Went Through Fire, story, 6194
Man with a Hundred Sons, story, 901
Man with the Hoe, The, Millet's famous picture in Louvre, 2792, 4205, 6035
Manx cat, picture, 416
Manx shearwater, bird, 3999
 in colour, 3021
Manzoni, Alessandro, Italian romantic novelist and poet, 4583
Maoris, people of Polynesian stock in New Zealand, 770, 1140, 2696
Maori art, 198, 6732
 first in World Wars, 2697
 progress since 19th century, 2697
 Treaty of Waitangi with British Government, 2696
 pictures, 2706

Map, world as drawn by Anaximander, 914

what do the words on a weather map mean? 6721

See also under each country

Maple, common, 948
 seeds winged, 3542
 uses, 3788
 Montpelier maple, seed keys, 947
 tree, leaves, and flowers, 3906
Mara, demon, legend, 4894
Mara, hare-like rodent, 1036
Marabou, species of stork, 3872, 3868
Maracaibo, Lake, Venezuelan fresh-water lagoon, lake dwellings, 7001
Marah, bitter water of, 1239
Maranon, Amazon's upper course, 7006
Marat, Jean Paul, French revolutionary, 654, 4044, 647
Marathon, battle of (490 B.C.), great victory of Athenians and Plataeans over huge Persian army, 889, 3122, 4027, 5088, 6388
Marble, marble quarrying, 5845
 action of rain on it, 642
 Carrara: see Carrara
 formed by animalcules, 4856
 good heat-conductor, 2173
 specific gravity, 4954
 use in ancient Greek architecture and sculpture, 4028, 5498
 what it consists of, 4997
 why is a marble put in the kettle, 681
 cut into slabs, 5855
 quarrying, 4922, 5846-7
 picture, 1220
Marbled white butterfly, with egg, caterpillar, and chrysalis, in colour, 6206
Marbles, game, 5562
Marcel, Etienne, French patriot, 5736
Marcellus, Roman general, 6804
March (month), origin of name, 5336
 picture, 5337
March of the Ten Thousand, story, 1889
Marconi, Guglielmo, Italian electrical engineer, 2092, 3362
 laughed at when he first signalled across Atlantic, 5756
 flying kite in Newfoundland, 3361
 portrait, 3363
 sending wireless messages when a boy, 3361
Marconi House, aerials on roof, 2094
 first B.B.C. broadcasts from, 5107
Marco Polo, Venetian traveller, 771
 as a traveller in China, 6503
 Japan described by him, 6618
 on Chinese use of coal, 2833
 post offices found in China, 4628
 reference to oil wells, 2962
 travelling in the East, 769
Marcus Aurelius, Roman emperor, 1785, 2877
 on differences in men, 6375
 Roman who wrote in Greek, 5432
 Column of Marcus Aurelius, Rome, 5507
 Faustina, his wife, portrait, 2879
 portrait, 2873, 2878
 sculptured head, 72
Mardale, Westmorland, Haweswater reservoir, 4504
Mardonius, Persian general routed by Greeks, 6804
Marduk, the Biblical Bel and Merodach, Babylonian god, 6300
Mare, Walter de la, British poet: see De la Mare
Marengo, battle of (1800), Napoleon defeats Austrians, 1454
Mare's nest, what is it? 4891
Mare's tail, of genus Hippuris, 6492
Margaret of Anjou, queen of England, wife of Henry IV, 980
 meets robber in forest, 955
Margaret, Danish queen who united Scandinavia, 5148
Margaret, queen of Navarre, sister of Francis I of France, 6360
Margaret, queen of Scotland, wife of James IV of Scotland, 1073
Margaret of Parma, painting by Josef Israels in Amsterdam, 3400
Margarine, what it is, 5615
 fat in same proportion as butter, 2309
Margate, seaside resort in the Isle of Thanet, Kent, view near jetty, 349

Margined *cladactis anemone*, in colour, 1555

Margott, F., his painting, *Sleep of Jesus*, 1664

Mariana, Juan de : see *De Mariana*

Mariana of Austria, queen, portrait by Velasquez, 1316

Mariana, character in Shakespeare's *Measure for Measure*, 6051

Mariana lactea, botanical name of sow thistle, 5286

Marianne, name used as symbol of the French Republic, 5863

Maria Theresa, Austrian empress, 4297

Maria-Worth, Austria, village, 4561

Marie Antoinette, queen of Louis XVI of France, 652, 654, 3924, 4044

carp placed in Versailles pond by her still survive, 4979

Mozart played games with her, 146

Petit Trianon at Versailles her favourite residence, 6370

what were Marie Antoinette's country cottages ? 5002

in prison with family, 653

walking to execution, 653

Mariette, François Auguste Ferdinand, French Egyptologist, 6860

Marigold, flower's habit of opening and closing, 586

African, flower, 6380, 6384

corn, flower, in colour, 4661

marsh, flower, in colour, 6127

nodding bur-marigold, in colour, 6128

Marigold wartlet anemone, 1553

Marine worm, species, 6827

Maris, Jacob, Dutch painter, 3399

his painting, *Return of the Boats*, 3402

Maris, Matthijs, Dutch painter, 3399

Outskirts of Town, painting, 3403

Maris, William, Dutch landscape and animal painter, 3399

Marischal College, Aberdeen, designed by A. M. Mackenzie, 6472

Maritain, Jacques, French philosopher, 4458

Marius, Caius, Roman general, 4354, 4351

Marjoram, common, flower, in colour, 5396

Mark, St., body brought from Alexandria to Venice, 271

characteristics of Gospel, 6788

writing down St. Peter's words, 5557

Mark Antony, Roman general, 4355

in Shakespeare's *Julius Caesar*, 6292

portrait, 4351

Marked arrhenodes, beetle, in colour, 6336A

Marked corymbites, in colour, 6336

Marken Island, Holland, scenes, 5529

Market, prices steadied by recognised markets, 5516

Markham, Charles Edwin, American poet, 4205

See also Poetry Index

Markham, Sir Clements, British traveller and geographer, 2684

Markhor, wild goat, 1286, 1282

Marko, Serbian hero, 4610, 4847

Marks, Henry Stacey, Meeting of Parrots, painting, 3503

Marlborough, John Churchill, duke of, English statesman and general, 1214 on battlefield, 1329

portraits of himself and his wife, Sarah Jennings, by Kneller, 1926

Marlborough College, Wiltshire, arms, in colour, 4989

Marlborough House, London, Wren builds it, 4227

picture, 6251

Marlowe, Christopher, English poet, influenced by Shakespeare, 980

See also Poetry Index

Marmion, poem by Sir W. Scott, 2595

Marmoset, small donkey, 166

Marmot, genus of rodent, 1034, 1033

Marne, battles, in First World War, 1708

defeat of Atila near Châlons (451), 2156

Marquesas Islands, discovered by Mendana de Neyra (1595), 2377

Marquess, or *Marquis*, coat-of-arms, in colour, 4987

Marqueste, Laurent, Cupid, sculpture by him, 5132

Marquetry, the art of, 6737

Marquis wheat, discovery, 1326

picture, 1325

Marrakesh, or Morocco City, southern capital of Morocco, 6749

ramparts, 6764

Marram grass, sea-reed, 3308

Marriage, at Greta Green, 5371

permission for young people to marry, 6254

Marriage at Cana, by Paul Veronese, 282

pictures, 278, 938

Marrow (in human bones), red blood cells continually made by, 942

Marrow, vegetable, varieties, 2438

Marryat, Captain Frederick, English novelist, 3580

Mars (mythology), god of ancient Greece and Rome, 3516, 3532

sword of Mars held by Atila, 2154

March named after, with picture, 5338

Mars (planet), 3236

distance from Sun, 3118, 3236

facts and figures, 7061

Lowell's discoveries about it, 3616

moons, 3118, 3237

Schiaparelli discovers its canals, 3616

Pictures of Mars

as seen through telescope, 3235

canals and desert spaces, 3236

curious features of its surface, 3235

distance from Sun, 17

looking at, 7019

path of Mars, 15

Marsden, Revd. Samuel, first missionary in New Zealand, 2896

Marseillaise, French national song, 1261, 4456

Rouget de Lisle composing it, 4049

Rouget de Lisle singing it, 651

Marseilles, city and port of France, near the mouth of the Rhône, 4170

revolutionaries of, march on Paris, 4044

harbour, 4179

Palais Longchamp, 6365

Marsh, Professor, Othniel Charles, American palaeontologist : fossils of extinct birds discovered, 2638

Marshall Plan, reconstruction of European countries under, 3686

Marshall, Professor, English economist, on land, 5139

Marshalsea, The, London debtor's prison, mentioned in 14th century, 2012

Marsh andromeda, or *Marsh cistus*, description, 5892

flower, in colour, 6128

Marsh bent grass, 3309

Marsh buckler fern, in colour, 1797

Marsh cinquefoil, what it is like, 5888

flower, 5891

flower, in colour, 6128

Marsh cistus : see *Marsh andromeda*

Marsh club-moss, flowerless plant, 3408

Marsh cudweed, what it is like, 5890

flower, in colour, 6128

Marsh fritillary, with egg, caterpillar, and chrysalis, in colour, 6207

Marsh gas : see *Methane*

Marsh gentian, what it is like, 5890

flower, in colour, 6128

Marsh harrier, bird, in colour, 3024

Marsh hawk's-beard, description, 4782

flower, in colour, 4905

Marsh mallow, description, 5764, 5892

flower, in colour, 5643

Marsh marigold, poisonous plant, from which dyes are obtained, 5839

flower, in colour, 6127

Marsh pennywort, description, 5883

flower, 5891

Marsh plume-thistle, description, 5890

flower, in colour, 6127

Marsh ragwort, what it is like, 5890

flower, in colour, 6128

Marsh red-rattle, what it is like, 5892

flower, in colour, 6128

Marsh ringlet butterfly : see *Large heath butterfly*

Marsh St. John's wort, description, 5892

flower, 5891

Marsh samphire : see *Jointed glasswort*

Marsh sedge, what it is like, 6012

flower, 6007

Marsh speedwell, or *Marsh veronica*, what it is like, 5892

Marsh tit, bird, in colour, 3024

Marsh trefoil : see *Buck bean*

Marsh veronica : see *Marsh speedwell*

Marsh violet, what it is like, 5888

flower, in colour, 6128

Marsh warbler, bird, in colour, 2900

Marsh whorled mint, in colour, 6130

Marsh willow-herb, description, 5892

flower, in colour, 6127

Marshwort, flower, in colour, 6130

Marsh woundwort, what it is like, 6011

flower, 6007

Marsh yellow-cress, relation of water-cress, 6012

flower, in colour, 6129

Marston Moor, battle of, fought in 1644, between Scots and Parliamentarians, 522

Marsupials, pouched animals of Australia, 2387

Marsyas, mythological satyr, sometimes Phrygian peasant, 3530

sculpture by Myron, 4148

Martel, Charles, son of Pepin and grandfather of Charlemagne ; ruler of the Franks, 2280, 2521, 3917

Moors driven out of France, 5272

Marten, mammal, 792

species of marten, 789-90

Martha and Mary, Bible story, 4214

Martial, Roman epigrammatical poet, 5432

Martial hawk eagle, bird, 3636

Martin, David, Raeburn's friend, 5694

Martin, Homer Dodge, American landscape painter, 3287

his paintings, *Harp of the Winds*, 3285

Sand Dunes, 3290

Martin, bird, characteristics, 3145

house marten, in colour, 3024

routes of migrations, 223

sand marten, in colour, 2897, 3139

Martineau, Dr. James, British theologian and philosopher, on God's presence about us, 3099

on St. Paul, 6538

Martineau, Robert, his painting, *Last Days in the Old Home*, 2679

Martini, Simone : see *Memmi*

Martinique, French West Indian island, Mont Pelée volcano, 2132

Martlet, bird in heraldry, 927

Martyn, Henry, English missionary and scholar, 1138

portrait, 1137

Martyr Girl of Sicily, story, 6812

Martyrs, the faith of, 1110

Martyr's Stone, at St. Bartholomew's Hospital, London, 4864

Marvell, Andrew, English poet and satirist, 4482

refusal of king's bribe, story, 5951

Milton's meeting with him, 1354

See also Poetry Index

Marx, Karl, German economist and socialist, 5900

Mary, mother of Jesus, her story, 3589

Pictures of Mary

The pictures are titled *Madonna*, their Italian name, or the *Virgin Mary*

by Andrea del Sarto, 1663

by Botticelli, 567, 571, 3657

by Bouguereau, 3656

by Carlo Dolci, 1664

by Correggio, 933, 939

by Delacroix, 3656

by Duccio, 568

by Ferruzzi, 1664

by Ghirlandaio, 569

by Giovanni Bellini, 938

by Holbein, 1192

by Ingres, 1662

by Iteenbach, 3594

by Leonardo da Vinci, 689

by Lippi, 567

by Lorenzo di Credi, 567, 572

by Matsys, 1053

by Mignard, 1680

by Murillo, 1309, 1661

by Perugino, 824, 3594

by Raphael, 821-4

by Sassoferrato, 1663

by Van der Weyden, 1053

by Veronese, 940

in psalter of 12th century, 1925
 Mosaic figures, 447
 sculpture by Andrea della Robbia, 4899
 sculpture by Benedetto Majano, 4725
 sculpture by Charles S. Jagger, 4766
 sculpture by Michael Angelo, 4529, 5014
 sculpture of 14th century, 4898
 with St. Francis and St. John, 565
Mary I, queen of England, daughter of Henry VIII, married Philip II of Spain, 1082, 6241
Mary II, queen of England, daughter of James II, married William Prince of Orange, 1214
 Greenwich Palace turned into hospital by her, 6241
Mary, queen of Scots, daughter of James V, 1082
 reproved by John Knox, 7056
 Elizabeth signs death warrant, 1080
 John Knox preaching before her, 2554
 portraits, 1077, 4134
Mary, queen of Hungary, portrait by Velasquez, 1315
Mary, sister of Martha and Lazarus, Bible story, 4214
Maryland, American Atlantic State, Lord Baltimore founds it, 3792
 State flag, in colour, 6970
Mary Magdalene, Jesus's feet washed by her, 4212
 Christ appearing to her, 1680
Mary of Modena, queen of James II, 1214
Marzabotto, old Etruscan town, 6994
Masaccio, Tommaso Guidi, Florentine painter, 573
Masada, Palestine, ancient fortress, 6280
Masaryk, Thomas, first Czechoslovak president, 4552
Mascagni, Pietro, Italian composer, 150
Masefield, John, English poet, novelist, and writer of plays, 4052
 hymns written by, 1760
 novels, 3714 ; portrait, 4077
 See also Poetry Index
Maseru, capital of Basutoland, 3311
Maskelyne, Nevil, English astronomer, 3614
 British Nautical Almanac started, 3279
 on mountains and plumb lines, 4642
 portrait, 3611
Mask of Medusa, sixth-century B.C. sculpture, 4031
Mason, Alfred Edward Woodley, English novelist, 3713
Mason, Sir Josiah, pen manufacturer ; invented metal pen machine, 2034
Mason-bee, clever nurseries, 5841
 with nest, 5843
Masonry, building operations, 2530
Maspero, Gaston Camille Charles, French Egyptologist, 6860, 8066
Mass (in physics), distinguished from weight, 394, 4835
 measurement of mass explained, 4834
Massachusetts, American State, flag, in colour, 6970
 Harvard University, 3683
Massacre of the Innocents, Brueghel's picture in Brussels Museum, 1058
Massasoit, Indian friend of Pilgrim Fathers, statue, 3688
Massawa, port of Eritrea, 6754
Maséna, General, French soldier, 1454
Massey, Gerald, British poet ; for poem see Poetry Index
Massif Central, France's central highlands, 4164
Mast (in ship), why does a mast taper toward the top ? 4267
Mastaba, name given to ancient Egyptian tombs, 5379
Master and His Scholars, story, 3370
Master of the Rolls, who he is, 4775
Masters, Edgar Lee, American poet, 4205
Mastiff, dog, breeds, 670
 types, 541, 665
Mastigophora, a species of protozoa, 6956
Mastodon, fossil elephant, 11, 1756, 2028
Mastodontosaurus, fossil amphibian, 1383
 remains, 1383
Matabele, Rhodesian tribe, child, 3193
 letter-carriers, 3192

Matadi, port of Belgian Congo, 6752
Matanzas, Cuba, planter's home near there, 7009
Matavanu volcano, on Savaii island, Samoa, 2249
Match, first inventions, 1675
 how to light a match with the Sun, with picture, 2485
 how to make a swing of matches, with picture, 5686
 tricks to do with matches, with picture 1496, 1624, 2235, 3597, 5933
 why does a match flare up when turned upside down ? 2921
 why does a match go out ? 312
 why does a match strike ? 1673
 early ways of striking a light, 1674-5
 picture-story of manufacture, 3641-45
Matchbox, tricks with, 753, 5933
 being made, 3646
 box-label printing machines, 3645
Matchbox container, how to make, with picture, 6176
Maté, or Paraguay tea, 2316
Matějko, Jan, Polish historical painter, 5028
Materials, weight of a cubic foot of various kinds, 7074
Matfellow : see Great knapweed
Mathematics, the science of numbers and their relations to one another, 427
 Archimedes used them in the service of invention, 1290
 Euclid used them, 986
Matholwch, Lord of Ireland, 3994
Matilda, queen of England, wife of William the Conqueror, abbey at Caen founded by her, 5746
 Bayeux Tapestry said to have been her work, 6739
Matilda, or Maud, queen of England, daughter of Henry I, fight for crown against Stephen, 718
Matisse, Henri, modern French painter, 3046
 painting, Woman at a Window, 3041
Mat-making, in Madagascar, 6748
Matopopo Hills, Southern Rhodesia, grave of Cecil Rhodes, 3312, 3311
Matrix, or mould, paper matrix explained, 2404, 2409
Matronalia, Roman festival in honour of Juno, 3514
Matsys, Quentin, Flemish painter, 1057
 portrait of Bishop Gardiner, 1053
 Virgin and Child, 1053
Mattathias, Jewish priest and patriot, 890
Matter, chemical compounds, 4345
 electricity the heart of it, 105
 elements, 4221
 explorers of matter, 6309
 wonder of matter, 4097
 circulated by plants, 85
 cosmic dust a form of it, 5319
 Energy, Mind, and Matter ; the greatest is Mind, 1616
 gaseous matter, 4100
 three states, 4099, 5197
 do we know any kind of matter not found on the Earth ? 2918
Matterhorn, Swiss mountain in the Pennine Alps, view, 4675
Matthew, St., apostle, 6791, 6787
Matthias, St., who he was, 6791
Matthias Corvinus, great Hungarian king, 4550
 his honest shepherd, story, 5829
Mattress, how to make spring mattress for camp bed, with pictures, 6301
 why does a mattress have leather buttons ? 4136
Maud, or Matilda, queen of England, wife of Henry I, 718
Maude, Sir Frederick Stanley, British general who conquered Mesopotamia ; 1709
Maud Muller, picture to poem, 2457
Maudslay, A. P., archaeological work in Central America, 6993
Maudslay, Henry, English engineer, Nasmyth's master, 5946
Maunch, heraldic charge, 926
Maudy Money, what is it ? 6226
Maupassant, Guy de, French novelist, 4458
Mauriac, Francois, French novelist, 4458

Mauritania, French West African colony, 6749
Mauritius, British island in the Indian Ocean, 3421
 arms, in colour, 4985
 flag, in colour, 6967
 French troops marching out, 2081
 Port Louis, street scene, 3434
Mauritius hemp, what it is, 2566
Mausoleum of Halicarnassus, tomb of King Mausolus of Caria, Asia Minor, one of the Seven Wonders of the World, 4277, 4884, 4885
 sculptured figures from it, 4276
Mausolus, King of Caria ; his statue one of the first definite portraits in Greek sculpture, 4278, 4276
 tomb of Mausolus : see Mausoleum
Mauve, Anton, Dutch landscape painter, his paintings, Spring, 3775
 The Hay Cart, 1904
 The Meadow, 3775
Mawson, Sir Douglas, English Antarctic explorer, discoverer of King George V Land, 6554
 portrait, 6549
 scenes in Antarctic, 6548, 6561
Maxence, Edgar, Devotions, painting by, 3096
Maximilian, Austrian archduke and emperor of Mexico, 4609
Maximilian I, German king and Roman emperor, 4293, 4545
 married Netherlands heiress, 5527
 tomb at Innsbruck, 4548, 6740
 receiving Venetian Ambassador, 4295
Maximilian II, German king and Holy Roman emperor, medallion portrait of wife, 6733
Maximin II, Roman emperor, 2881
Maximinus Thrax, Roman emperor, Maximinus I, or Maximin, Gaius Julius Verus, called Thrax (the Thracian) ; portrait, 2879
Maximus, Prince, story and picture, 1887
Max of Baden, Prince, a German Imperial Chancellor, 4300
Maxwell, James Clerk, Scottish mathematician and electrician, 2090, 3360
 radiation pressure theory, 5816
 waves theory that became basis of wireless, 6314
 enters Edinburgh Academy, 6315
 in laboratory, 3361
 portrait, 3359
May, month, origin of name, 5338, 5337
Mayas, Indians of Central America, excavations which reveal their former culture, 6993
 sculpture of god and high priest, 6993
 sculpture from Guatemala, 6991
Mayence : see Mainz
Mayfield, Sussex, Tudor hotel, 1088
Mayflower, ship of the Pilgrim Fathers, 1206, 3792, 4006
 Pilgrim Fathers in cabin, 3793
 sailing from Plymouth, 3790
 signing of covenant, sculpture, 5543
May-fly, life story, 5715
 common, insect, in colour, 5713
Mayhew, Thomas, 18th-century English cabinet-maker : fine style of furniture developed by him, 6737
Maynard, John, Pilot, story of, 6694
Mayor, who he is, and his work, 4410
Mayweed, flower, 4413
Mazarin, Cardinal Jules, French statesman, 3922
 building of Louvre carried on, 6370
 tomb by Coysevox, in the Louvre, 4645
 Death of Mazarin, by Delaroche, 1807
 portrait, 3917
Mazeppa, ride on wild horse, 5415
Mazetrolle, J., Christians meeting in Rome, painting, 1905
Mazzini, Giuseppe, Italian patriot and author, 896, 4583, 4787
 in prison, 4785
 portraits, 889, 4133
Mbabane, capital of Swaziland, 3312
Meadow, flowers of the meadows, 4413
 flowers, pictures, 4412-13
 series, in colour, 4417-20
Meadow ant, swarm in nest, 5965
 types, 5967
Meadow barley, grass, 3305

- Meadow brown butterfly**, heath flowers fertilised by it, in colour, 2048 with egg, caterpillar, and chrysalis, in colour, 6208
- Meadow buttercup**, flower, 4412
- Meadow crane's-bill**, member of Geranium family, 4416, 5890
- flower, in colour, 6128
- Meadow fescue**, grass, 3306
- Meadow fox-tail**, grass, 581
- Meadowgrass**, species, 3305, 3307, 3310
- Meadow hawkbit**, what it is like, 4542
- flower, in colour, 4663
- Meadow pea**: see Meadow vetchling
- Meadow pipit**, bird, in colour, 2768
- male bird feeding baby cuckoo, 3379
- Meadow plume thistle**, member of Composite family, 4414
- Meadow-rue**, Alpine, flower, 5521
- yellow, in colour, 6127
- Meadow saffron**, member of genus Colchicum, 6497
- member of Lily family, 4416
- flower, in colour, 4418
- Meadow soft grass**, 3310
- Meadowsweet**, of genus Spiraea, 6492
- uses and appearance, 6008
- flower, 6009
- Meadow thistle**, flower, 4412
- Meadow vetchling**, what it is like, 4416
- flower, 4412
- Mealies**, South African name for edible part of maize: principal food of South African natives, 3188
- Mean Noon**, what it is, 5122
- Mean Sun**, what it is, 5122
- Mean Time**, what it is, 5122
- Meare**, Somerset, ancient lake village discovered, 6997
- Measure for Measure**, story of Shakespeare's play, 6050
- Measurement**, principles explained, 4833
- advantages of metric system, 4834
- Centigrade and Fahrenheit scales of measuring temperature, 4835
- coins useful for measuring objects, 4344
- measuring distances by sound, 2113
- specific gravity of objects, 4953
- toy to measure the wind, 749
- Weights and Measure Tables**, 7069-73
- how can we measure a country? 4388
- how did the Romans measure distance? 3284
- Meat**, food value considered, 2557
- Argentina's great export, 7017
- Britain produces about half of her consumption, 6004
- how to cook, with pictures, 997
- New Zealand's frozen meat, 2696
- production in British Empire and Commonwealth, 2074
- salt needed more with cooked than with raw meat, 1540
- white meat most easily digested, 2558
- United States' production, 3681
- how frozen meat is stored, 1677
- Meat-fly**, insect, in colour, 5714
- Meath**, Earl of, founder of Empire Day, 4017
- Mecca**, Moslem holy city and commercial capital of Arabia, 5086, 5624, 6262, 6264, 6265
- pilgrims praying round Ka'aba, 6276
- Mechanical movement**, 6348
- hundred pictures, 6349-6352
- Mecklenburg**, Germany, map, in colour, 7087
- Medal**, object in metal with sculpture in relief, cast to commemorate great events and people:
- 17th-century silver one, 70
- portrait of John Thurloe, 71
- specimen from Syracuse, 71
- Medea**, in Greek mythology, Jason's wife, 6937
- Medes**, Babylon, captured by, 3102
- Media**, ancient kingdom of western Asia, 6386
- map, in colour, 7093
- Medici**, family, arms of, 5490
- famous palaces at Florence, 6108
- patrons of art, 4786
- who were the Medici? 5371
- tombs in Florence, 4723
- Medici, Catherine de**, French queen and intriguer, mother of three French kings, 3922
- apartments in Château de Blois, 6359
- gallery between Louvre and Tuileries planned by her, 6360
- Medici, Cosimo de**, convent of San Marco rebuilt by him, 4730
- interest in Donatello, 4523
- Pitti Palace sold to his wife, 6108
- Medici, Ferdinand de**, portrait by Bronzino, 823
- Medici, Giovanni de**, becomes Pope Leo X, 6185
- Medici, Lorenzo de**, the Magnificent, patron of scholars and artists, 6184, 6188
- as one of the Magi, 4725
- sculpture by Michael Angelo, 4531
- Medici, Marie de**, Luxembourg Palace built for her, 1681, 6358
- portrait by Bronzino, 3537
- visiting Rubens, 6675
- Medici, Piero de**, portrait by Bronzino, 824
- Medicine**, plants that give us it, 2683
- beginnings of medicine, 3120
- chemical achievements, 4471
- electricity and medicine, 233
- invention of medicine, story, 6954
- old-time superstitions, 2502
- radioactive properties used in, 4814
- use of herbs, 2683
- writings of Avicenna, the Persian, 5678
- plants, in colour, 2687
- Medick**, seeds with hooks, 946
- Medina**, Arabia, burial place of Mohammed, 6264
- Mohammed exiled there, 5086
- general view, 6276
- Meditations of Marcus Aurelius**, extracts from, 2880, 2881
- Medlar tree**, fruit, 1817
- wild fruit, in colour, 3668
- Medusa**, in Greek mythology, 3530
- who was she? 5736
- Mask of Medusa**, sculpture of 6th century B.C., 4031
- Medway**, Kentish tributary of the Thames, Dutch burn English ships, 1212
- Mee, Arthur**, painting by Frank O. Salisbury, facing page one
- Meerkat**, mammal related to the mongoose, 416
- Meerschauum**, mineral, 1304
- Megaera**, mythological Fury, 3532
- Megalomania**, what it means, 1538
- Megaphone**, why does it make the voice sound louder? 5127
- Megara**, city of ancient Greece, 5822
- Megrim**, fish, 5105
- Mehoffer**, Polish artist, 5029
- Meija**, General, refusal to desert the Emperor Maximilian, 4609
- Meinertzhagen, Richard**, work on speed of birds, 6852
- Meissen**, home of the Dresden china industry, on the Elbe, in Saxony, 6737
- Meissonier, Jean**, French historical and battle painter, 1808
- A Cavalier, 3169
- Art Lovers, 3779
- Napoleon at Boulogne, 1449
- Napoleon's Retreat from Moscow, 1448
- The Brawl, 3534
- Meknes**, city of Morocco, 6749
- Berdan Gate, 6764
- Mekong River**, Indo-China, 6513
- Melbourne**, capital of Victoria, Australia, 2573
- Russell Street and modern office buildings, 2579
- Melchett, Alfred Mond, Lord**, founder of Imperial Chemical Industries, 4105
- portrait, 4102
- Melchior**, one of the three wise men, journey to Bethlehem, 3590
- Meleager**, hero in Greek legend, 6813
- sculpture in Vatican, 5130
- Meliott**, common yellow, 5020
- flower, 5021
- Melita**, ancient name of Malta, 6665
- Mellifont Abbey**, Ireland, Norman baptistery, 3060
- Melinus**, field, insect, in colour, 5714
- Melon**, member of Gourd family, 2432
- appearance and where grown, 1820
- pictures of melons, 1815, 1817
- Melos**, Greek island, Venus de Milo statue discovered there, 4144, 6987
- Melpomene**, Muse of tragedy, 3517
- Melrose**, Roxburghshire town on the Tweed, abbey, 1337
- Melting Points of Metals**: see 7073
- Melville, Herman**, American novelist, 4333
- Member of Parliament**, election of, 4536
- how he can resign, 5244
- Membrane**, in human anatomy, 1693
- Membrane-leaved phyllophora**, 3414
- Memling, Hans**, Flemish painter, 1056, 5652
- portrait of Van Newenhaven, 1055
- The Adoration, 1055
- Virgin and Child, 1054
- Memmi, Simone**, Sienese painter, 568
- Angel of Annunciation, painting, 572
- Memory**, a part of all living matter, 4035
- how to keep a memory book, 6176
- why do we forget things? 4022
- why do we forget what happened to us when we were babies? 4386
- Memphis**, ancient city of Egypt, ruins discovered by Mariette, 6860
- Serapeum entrance, 6865
- Menai Straits**, Wales Britannia art Suspension Bridges at, 547, 1461
- Menan, River**, Siam, 6513

MEN AND WOMEN

- The following are actual headings of the chapters in this group: the subjects dealt with will be found in their proper places in the index:
- The First Flying Men, 19
- The Kings of Music, 141
- The Famous Men of Venice, 271
- Creators of Fantasy, 339
- Cromwell and His Men, 521
- The French Revolutionists, 647
- Men Who Made the World Known, 789
- The Creators of Liberty, 839
- The Discoverers of America, 1013
- Famous Missionaries, 1137
- The Writers of the Songs, 1261
- Famous Monks, 1385
- The Men Who Gave Us Printing, 1511
- Lincoln and Washington, 1637
- The Writers of the Hymns, 1757
- Men Who Made the Microscope, 1883
- Walter Scott and Charles Dickens, 2009
- British Statesmen, 2133
- Joan and Saint Louis, 2251
- The Men Who Found Australia, 2377
- The First Great Doctors, 2501
- Conquerors of Disease, 2623
- The Men Who Made the Railway, 2745
- The Caesars, 2873
- The Explorers of Africa, 2997
- The Great Greeks, 3119
- Slavery and Its Conquerors, 3239
- The Wireless Pioneers, 3359
- The First Astronomers, 3487
- The Men Who Mapped the Skies, 3609
- The Men Who Gave Us Ships, 3733
- The Great Craftsmen, 3855
- Two Saints of England, 3979
- Creators of British Industry, 4103
- Builders of London, Old and New, 4225
- Famous Men of Rome, 4349
- Shakespeare and Milton, 4473
- Men of the Northern Sea-Gates, 4597
- The Artists of Florence, 4715
- The Old Philosophers, 4837
- The Men Who Gave Us Schools, 4955
- Wise Men of the East, 5077
- Founders of the Empire, 5203
- The Electricity Pioneers, 5323
- Great Crusaders, 5447
- Explorers of Life, 5569
- Great British Painters, 5691
- The Immortal Three, 5819
- Great Inventors, 5939
- Men Who Made Australia Known, 6063
- The Master Men of Italy, 6183
- The Explorers of Matter, 6309
- The North Pole Men, 6431
- The South Pole Men, 6549
- The Great Painters, 6673
- Great Men of Antiquity, 6797
- Mencius**, Chinese philosopher, died about 289 B.C., 5675, 6797
- portrait, 6797

- Mencken, Henry Louis**, American writer and literary critic, 4335
- Mendaña de Neyra, Alvaro**, Spanish navigator, 2377
- Mendel, Gregor**, Austrian writer on heredity in plant life, 4130, 5578 working in monastery garden, 5575
- Mendeleef, Dmitri Ivanovitch**, Russian chemist, his table of elements, 4222
- Mendelssohn, Jacob**, German composer. portrait, 145
- Mendip Hills**, range of hills in Somerset, 467, 1384, 1880
- Mendoza, Diego de**: see De Mendoza
- Mendoza, Pedro de**: see De Mendoza
- Mendoza, city of Western Argentina**, 7018
- Menelaus**, legendary king of Sparta, husband of Helen of Troy, 4518
- story of the Iliad, 5303
- Menepthah**, king of Egypt, inscriptions discovered by Sir W. Flinders Petrie, 6868
- Menes**, Ancient Egyptian king, 6875
- Meng-tse**: see Mencius
- Menkaura**, Ancient Egyptian king, 6878
- Mennonites**, German sect, 2072
- Men of Old**, picture to poem, 2957
- Men of the Birkenhead**, story, 5342
- Menopoma**, amphibian, 4745
- Menshevik**, meaning of term, 6353
- Men Who Chose Their Lives**, story, 6893
- Menzel, Adolf**, German painter, 3398
- Mequinez**: see Meknes
- Merak**, star of the Plough, 3728
- Merchant, Elizabethans turn to India and East**, 4125
- Law of Ina which made the merchant a thane, 3382
- Merchant of Venice**, the story of Shakespeare's play, 6041
- Shylock and the merchants, 1101
- Merchant Navy**, crucifix used to be on quarter deck, 2540
- early English ships described, 3382
- First World War losses, 1710
- flags used by, 6862
- Red Ensign, in colour, 6965
- Merchant Taylors' School**, arms, in colour, 4989
- Mercié, Antonin**, French sculptor, 4647
- his sculptures, Joan of Arc, 5260
- Mireille, 5009
- Remembrance, 4650
- Mercury (mythology)**, or Hermes, god of ancient Greece and Rome, 3516
- how he invented the lyre, 4964
- how he set Io free, 4484
- adopts his wand, sculpture, 5258
- taking flight, sculpture, 4525
- See also Hermes
- Mercury (astronomy)**, planet, general description, 3233
- distance from Sun, and year's length on it, 3118
- facts and figures, 7061
- at greatest, mean, and least distances from Earth; and orbits of Earth, Venus, and Mercury, 3234
- distance from Sun, 17
- path through space, 15
- surface as imagined, 3237
- Mercury (chemical)**, boiling point, 4998
- conductivity: see Heat Conductors, 7073
- denser than water, 394
- melting point: see Melting point of metals, 7073
- specific gravity, 4954
- use in thermometer, 5445
- use in Torricelli's experiment, 5198
- vapour use in street lighting, 1300
- why does iron float on mercury? 814
- picture of sulphate of mercury, 1302
- See also Quicksilver
- Mercury arc**, rectifier in electricity, 2715
- Mercury (plant)**: see Good King Henry
- Mercy**, painting by Millais, 3919
- Meredith, George**, English novelist and poet, 3584, 4079, 3579
- See also Poetry Index
- Méres, Francis**, English divine, translator, and author, on Ovid, 5431
- Merestomata**, extinct crab family, 5472
- Mereworth Castle**, Kent, 6470
- Merezhkovsky, Dmitri**, Russian author and literary critic, 4817
- Merganser**, bird, hooded, 3753
- red-breasted, in colour, 3024
- Mergenthaler, Ottmar**, German-American mechanic, 1518, 1517
- Meridian**, magnetic meridian, 361
- what is the meridian? 4516
- Merino sheep**, in Australia, 799, 1281
- Merlin**, in Arthurian legends, 6941
- in Faerie Queene, 5922
- Beguiling of Merlin, painting by Burne-Jones, 6948
- Merlin**, bird, habits, 3628
- in colour, 3021
- prepares meal for young, 3635
- Mermaid**, origin of legends, 2145
- Mermaid Tavern**, London meeting-place of Shakespeare and Jonson, 859
- Merodach**: see Marduk
- Merrimac**, Confederate ironclad sunk by Monitor, 3738
- Merriman, Seton**: see Scott, H. S.
- Merry are the Bells**, rhyme and picture, 3940
- Mersey Docks Board**, flag, in colour, 6966
- Mersey Tunnel**, roadway under River Mersey between Liverpool and Birkenhead, 4378, 6214
- construction, series, 6220-23
- interior view, 4377
- machine cleaning walls, 4377
- Mersina**, Turkey, a fruit shop in, 6145
- Merton College**, Oxford, arms in colour, 4988
- Mertz, Xavier**, Antarctic explorer, 6554
- Mesdag, Hendrik Willem**, Dutch marine painter, 3400
- Beaching Dutch boats, painting by, 3402
- Mesdag Museum**, 2790
- Rousseau's picture, The Sunlit Oak, 2970
- Mesha**, king of Moab, records found on Moabite Stone, 6983
- Meshaiah**, in book of Daniel, 3101
- Mesheb**, Moslem holy city in north-east Persia, 6385
- great mosque at, 6393
- Meshippuz**, ancestor of horse, 1894
- Mesopotamia**, or Iraq, Western Asia, archaeological discoveries in, 6868-70
- British Expeditionary Force there in First World War, 1709. See also Iraq
- Mesozoic Era**, geological division of time, 646, 1381
- Messalina**, Roman empress, 1667
- Messiah, The**, Handel's masterpiece, written in 23 days, 144
- Messina**, city of Sicily, mosaic of Mary and Jesus, 447
- municipal office, 4920
- Messina, Straits of**, 4910
- Mestizos**, American half-breeds, 7002
- Mestrovic, Ivan**, Yugoslavian sculptor: his sculpture, Head of Milos, 4895
- Metal**, alkaline metals, 4222
- conducts sound waves, 1725
- discovery in Bronze Age, 315
- examination by X-rays, 2472
- fatigue of metals, 3035
- groups, 4345
- heat conductivity of metals, 7073
- melting point, 7073
- how did it get into the Earth? 4893
- why do metals let light through when beaten thin? 1550
- electronic machine for detecting metal in other materials, 2717
- Metallurgy**, definition, 2001
- Metal work**, examples, 6733
- Metamorphosis**, in insect life, 5712
- Metazoa**, colonies of single-celled animals, 6955
- Metaxas, General Joannis**, Greek statesman, 5788
- Metchnikoff, Elias**, Russian biologist, 2626, 2623
- Metella, Cecilia**, tomb in Rome, 1781
- Meteor**, what it is, 3607
- why are there so many meteors in November? 6730
- Humboldt watching display, 3606
- Meteora**, Greece, St. Barlaam Monastery, 5777
- Meteorite**, diamonds in them, 3280
- fragments under microscope, 1911
- huge one found in Greenland, 3607
- Meteorological Office**, London observations wireless from ships, 3578
- Meteorology**, some terms in use explained, 6721
- Meter (gas)**, picture-story, 4127-28
- Methane**, or marsh gas, fire damp of the miner, 2337, 3332, 4347
- source of chloroform, 4348
- testing for presence in coal mines, 2838
- John Dalton collecting Marsh Fire Gas picture by F. Madox Brown, 6315
- Methodism**, influence in England, 4501
- Metopes**, architectural term, 5497
- Metre**, a unit of length, 4834
- Metric system**, its advantages, 4834
- See also 7070
- Metropolitan Railway**, electric locomotive, 4077
- Metropolitan Water Board**, testing London's water in a laboratory, 4503
- Metz**, capital of Lorraine, France, Germans besiege it (1870), 4048, 4299
- general view, 4177
- Meu**: see Spiguel
- Meunier, Constantin**, Belgian sculptor, Hammer Man, sculpture, 4652
- The Puddlers, 4900
- Meuse**, river of France, Belgium, and Holland, 5646
- at Dinant, 5656
- at Namur, 5654
- French scene, 2498
- Mew, Charlotte**, English poet, 4082
- Mexican barn owl**, bird, 3501
- Mexican quetzal**, bird, in colour, 3143
- Mexico**, southern republic of North America, 7007
- excavations of Maya remains, 6993
- who built the pyramids of Mexico? 6727
- Colima volcano in eruption, 2249
- flags, in colour, 6974
- Pyramid of the Sun, 6727
- railway engine, 3512
- scenes and people, 7011-12, 7015
- sugar-cane plantation, 2313
- map, general and political, 7030
- map, in colour, 7100
- Mexico City**, capital of Mexico, 7000, 7030
- cloth market, 7012
- Meyer, Julius Lothar**, German chemist, table of elements, 4222
- Myneill, Alice**, English poet, 2972, 4081
- See also poetry Index
- Mezezon**, wild fruit in colour, 3666
- Mezzotint**, printing process discovered by Prince Rupert, 527
- method explained, 2426
- Peg Woffington, by J. Macardell, 2421
- Reynolds's Lady Delmé, by Valentine Green, 2421
- Romney's Lady Hamilton, by J. R. Smith, 2421
- Miami**, winter resort in Florida, 322
- scene, 3802
- Mica**, mineral, in colour, 1304
- Mice**: see Mouse
- Michael, St.**, mosaic picture, 445
- Michael Angelo**, Florentine sculptor and painter, 694, 6183
- admires Andrea del Sarto's work, 820
- characteristics of his sculpture, 4533
- Farnese Palace at Rome partly built by him, 6111
- Rembrandt compared with him, 1557
- work on St. Peter's, Rome, 6113
- writer and poet, 4583
- in his studio, 6182
- portraits, 65, 6183
- smiting Moses out of the rock, frontis., Volume 2
- statue in Florence, 6182
- with Vittoria Colonna, 6187
- Pictures by Michael Angelo**
- Creation of Adam and Three Fates in Sistine Chapel, 690
- Ezekiel, 913
- Holy Family in colour, 1662
- Holy Family and figures on ceiling in Sistine Chapel, 691
- Sistine Chapel, ceiling, 695
- three heads in Sistine Chapel, 687
- Sculptures by Michael Angelo**
- David, statue in Florence, 69, 72, 4728
- La Pieta, 4529
- Lorenzo Medici, 4033, 4531
- Madonna with Christ and St. John, 4529
- Medici Tombs, 4723
- Moses, 4529
- The Prisoner, 4528
- Victory, 75
- Virgin and Child, 5014

- Michael Goes Climbing, story, 2889
 picture, 2884
 Michael, King of Rumania, 5772
 Michael, James Lionel, Australian poet, 4205
 Michaelmas daisy, bunch of, 6259, 6383
 Michel, Ernest, Joan of Arc receiving Last Sacrament, painting, 2256
 Micheli, Peter A., Italian botanist, 3412
 Michelson, Albert Abraham, American scientist, 6318
 Michelozzi, Bartolommeo, Florentine sculptor and architect, 4523, 4729
 designed Riccardi Palace, Florence, 6108
 Michigan, American State, 3676
 flag, in colour, 6970
 fire at oil refinery, 3087
 motor works at Detroit, 3679
 Michigan City, Indiana, U.S.A., 3677
 Michigan, Lake, North America, 2494
 Mickiewicz, Adam, Polish poet, 4486, 5028
 Mickle, William Julius, Scottish poet: see Poetry Index
 Micklegate Bar, York, 6246
 Microbe, friends and foes, 697
 among the first living things, 199
 belongs to Fungus family, 702
 bile kills dangerous microbes, 2064
 cheese made by use of them, 693
 floats on air, 1070
 Lister's and Pasteur's discoveries, 2624
 multiplies, 3890
 photographing microbes, 4756
 sour milk microbe, importance, 2310
 white cells eat injurious microbes, 1059
 work done by them, 4440
 do microbes help to make cream? 4758
 development in one hour, 577
 specimens found in food, 575
 varieties, 577
 See also Tuberculosis
 Microline, mineral, 1303
 Microcosmus, sea squirt, 5346, 5347
 Microfarad, definition: see units of electricity, 7071
 Microlestes, Triassic mammal, 1384
 Micron, definition of: see units of measurement, 7071
 Microphone, Hughes's invention for telephone, 1844, 3362
 how the carbon microphone works, 1845
 Microscope, makers; various types described, 1883
 electron, power greater than any other, 2716
 electrons used in, 4099
 how to use it, 5072
 action, sectional drawing, 1885
 discovery by children, 1883
 electronic, in laboratory, 2715
 Leeuwenhoek looking through, 1882
 various objects seen through, 1909-16
 Microseconds, radar timing, 2464
 Midas, story of Phrygian king, 27
 Middelburg, Netherlands, 6738, 5538
 Middle Ages, architecture, 3508
 feudalism and chivalry, 3505, 3637
 Middle Congo, colony of French Equatorial Africa, 6750
 Middlemen, production helped by, 5262
 Middlesbrough, Yorkshire, transporter and lift bridges, 556
 Middlesex, southern English county, places in, 7165; road map, 7145
 Middlesex Guildhall, Westminster building planned by J. S. Gibson, 4230
 exterior, 4237
 Middle Temple, London, 4777
 Gatehouse, 6238; Hall, 6246
 Midge, its story, 6085
 cuckoo pint fertilised by, in colour, 2047
 wheat, British species, 6087
 Midhurst, Sussex, street scene, 1592
 Midian, flight of Moses to, 1114
 Midianites, defeated by Israelites, 1244, 1366
 Midland Railway, engine, in colour, 1044
 Midnight Horse, story, 1766
 Midnight sun, shining on Norwegian Fiord, 2743
 Midshipman fish, luminous spots, 184
 Midsummer Night's Dream, story of Shakespeare's play, 6294
 Helena and Hermia in garden, 981
 Mieris, Frans van: see Van Mieris
- Mieszko, tenth-century king of Poland, 5025
 Mignard, Pierre, French painter, 1634
 Marie de Bourbon, painting by, 3778
 Virgin with grapes, painting by, 1680
 Mignonette, Egypt native place of, 2661
 what it is like, 5023
 flower, 6378; in colour, 5142
 Migration, of birds, 2642
 world map of migration, 222-3
 Migratory locust, insect, in colour, 5713
 Mikado, title used by Europeans for Japanese emperor, 6618
 Milan, city of Italy, 4912, 5992
 basilican churches, 448
 churches built by Bramante, 6111
 French besiege it in time of Lodovico Sforza, 692
 Leonardo's life there, 6188
 Napoleon's triumphant entry, 1424
 Ospedale Maggiore, one of earliest hospitals in Europe, 6110
- Pictures of Milan
 cathedral front, 5999
 Central railway station, 4911
 Leonardo da Vinci statue, 4923
 Maggiore Hospital, court, and St. Maria Delle Grazie, 6116
 pictured events at, 4794
 triumphal arch, 4922
 Milanese art, school that erred on the side of prettiness, 935
 Milano, Giovanni da: see Da Milano
 Milchöfer, German writer on archaeology, 6935
 Mildev, member of Fungus family, 3411
 Mile, Roman mile explained, 3284
 See also 7069
 Mileham, H. R., his pictures
 Building Alfred's Fleet, 893
 David and Jonathan, 1856
 Jacob and Rachel, 864
 Joseph Relates his Dreams, 989
 Joseph Sold into Slavery, 992
 Miles, Alfred H.: see Poetry Index
 Miletus, capital of Ionia, 672
 temple of Apollo at, 5500
 Milford Haven, natural harbour in Pembrokeshire, Wales, 1460
 Milk, Nature's special food, 2307
 children grow fastest when fed with milk, 2559
 frozen blocks and powdered milk on ships, 3573
 iron in it, 943, 2183, 2309
 lime in milk a bone builder, 2183, 2308
 microbes contaminate it quickly, 697, 2172, 2310
 skim of boiled milk good food, 3651
 sour milk, its cause and use, 698, 2310
 specific gravity, 4954
 tubercular microbe flourishes in milk, 697, 2310
- Wonder Questions
 how does a cow make its milk? 4760
 how does it get into the coconut? 818
 why does a crust form on boiled milk? 3651
 why does boiling milk flow over? 4889
 why does milk turn sour in a thunderstorm? 2344
- Pictures of Milk
 examination in modern dairy, 2309
 food value, 2181
 Milkmaid, plant: see Lady's smock
 Milk microbe, in butter-making, 698
 sour milk caused by it, 698, 2310
 usefulness, explained, 697, 2310
 Milk thistle, of genus Mariana, 6493
 pest in Australia, 5266
 flower, in colour, 5393
 See also Sow thistle
 Milkwort, flowers, in colour, 5144, 5396
 sea milkwort, 5761
 Milky Way, appearance of, 3974
 cosmic rays produced by, 6318
 distance from Earth, 2996
 nebula, clouds of, 3973
 number of stars estimated, 3854
 nebulous matter, 3977
 part photographed, 3727
 photographed through telescope, 2989
 Mill, John Stuart, English economist and philosophical writer, 3830
 story of Carlyle's burnt book, 3216
- Carlyle told of burnt manuscript, 3217
 portrait, 4131
 Millais, Sir John Everett, English painter, 2548
- Pictures by Millais
 A Flood, 2547
 Death of Ophelia, 1106
 Jesus in House of his Parents, 3593
 Knight at the Ford, 2553
 Lorenzo and Isabella, 2552
 Mercy, 3919
 North-West Passage, 3534
 Rosalind and Celia, 1103
 Yeomen of the Guard, 2556
 Millay, Edna St. Vincent, American poet, 4205
 Mille passuum, Roman mile, 3284
 Miller, Emily H.: see Poetry Index
 Miller, Hugh, Scottish geologist, 2001
 Miller, Joaquin, American poet of Western life, 4205
 See also Poetry Index
 Miller, Patrick, Scottish pioneer of the steamship, 3734
 Miller, Thomas, English poet: see Poetry Index
 Miller, William, Scottish poet: see Poetry Index
 Miller, puzzle of the miller's sacks, 3723, 3848
 Miller's thumb, in colour, facing 5197
 Milles, Carl, Swedish sculptor, 4896
 Millet, Francis D., American painter and war correspondent, Between Two Fires, painting, 3538
 Millet, Jean François, French painter 2791
 work compared with Turner's, 2424
- Pictures by Millet
 Angelus, 75
 Burning Weeds, 2791
 Gleaners, 3171
 Man with Hoe, 6035
 Mother and Children, 2793
 Sheep on Footpath, 2796
 Shepherdess, 2793
 Millet, cereal grown for food, 1696
 plant, in colour, 2686
 Millet grass, spreading, 3308
 Mill Hill School, near London, arms, in colour, 4989
 Millibar, what is a millibar? 5370
 Millikan, Robert, American scientist, 6317
 first explored the cosmic ray, 4224
 Millin, Sarah Gertrude, South African writer, 4336
 Millipede, scavenger of plant life, 5600
 common, insect, 5599
 Millrind, heraldic charge, 926
 Millstone grit, mass near Tenby, 2006
 Milne, A. A., British writer, 404, 406
 Milnes, Richard Monckton, English poet and politician: see Poetry Index
 under Houghton, Lord
 Milo of Crotona, Puget's wonderful group of statuary at Versailles, 4645
 Milosh Rides with the Tsar, story and picture, 1023
 Miltiades, Athenian general, conqueror at Marathon, 889, 3122, 889
 Milton, John, English poet and political writer, 1231, 1355, 4478
 fight for freedom, 5350
 on Malory's Morte d'Arthur, 367
 number of words he used, 61, 5251
 Paradise Lost, his great poem, 6655
 secretary to Oliver Cromwell, 1210
- Pictures of Milton
 Andrew Marvell meets him, 1355
 as a boy, portrait, 1759
 at work, 4479
 bust over tomb, 4477
 cottage at Chalfont St. Giles, 4477
 scene from Comus, 1231
 scene from Paradise Lost, 1357
 sees Shakespeare pass, 1233
 statue in Cripplegate churchyard, 1222
 statue in Park Lane, London, 4477
 See also Poetry Index
 Mime, or Mimus, old form of dramatic play in ancient Rome, 5427
 Mind, emotions of the mind, 4279
 instinct and mind, 3585
 its various kinds, 4149

real master of the body, 4033
directing life toward that which is good, 618
nope is a condition of a healthy mind, 2106
ts immortality, 4088
iberty of mind, 4208
Man's greatest possession, 2854
matter's relation to it, 114
psychology the science of mind, 2105
unexplored mysteries, 3958
Mindanao, island of Philippines, 6514
Mine, deepest in world, 6353
diamond, picture story, 6718
water power used, 5602
See also Coal-mining, Salt, and so on
Minelli Palace, Venice, stairway, 276
Mineral, Commonwealth's resources, 6004
Australia's production, 2570
Canada's production, 2324
Northern Rhodesia's production, 3314
Southern Rhodesia's production, 3312
United State's resources, 3676
one hundred, in colour, 1301-1304
See also Metal and specific names
Minerva, or **Athene**, mythological goddess, challenged by **Arachne**, 6938
worshipped in ancient Greece and Rome, 3516
sculpture in Vatican Museum, 1777
See also **Athene**
Ming, Chinese dynasty, 5604
Ming tombs, China, stone animals near them, 6508
Minho, Portuguese river, 5270, 5402
Miniature, English school of miniature painters, 2049, 2419
examples by Nicholas Hilliard, Peter Oliver, and Samuel Cooper, 2049
portrait of Cromwell, 71
Minim, unit of liquid measurement in apothecary's or wine measure: see apothecary's measure, 7069
Minivet, bird, in colour, 3261
Mink, animal, home, 793
Minneapolis, city of Minnesota, U.S.A., the Foshay Tower, 3675
Minnesota, American State, flag, in colour, 6970
Minnow, food and habits, 4979
in colour, facing 5197
Minobu Temple, Japan, 5082
Minos, king of Crete, 6805
judge of the dead, 3532, 6930
palace at Knossos, 322, [4023, 6936, 6991
sculpture of, 6805
throne at Knossos, 6991
Minotaur, Cretan legend, 6805
story possibly true in view of Sir Arthur Evans's discoveries, 4023
Minstrel Queen of Spain, story, 1024
Minstrelsy of the Scottish Border, collection of old songs and ballads by Sir Walter Scott, 2595
Mint, member of Libiate family, 6011
members of the family in cornfields, 4544
various species in colour, 6127, 6129-30
Mint, London, view, 3271
how coins are made, series, 3271-6
Minute Men, what were the Minute Men of America? 5252
statue at Concord, U.S.A., 3689
Miocene Age, description, 1756
Miot, excavation of Pompeii, 6995
Mirabeau, Comte Gabriel de, French statesman, 648
portrait, 647
Mira Ceti, the wonderful star, 3854
Miracle play, what it is, 857, 5860
Mirage, what is it? 440
what is the Fata Morgana? 3165
at sea, in desert, and diagram, 441
Miranda, character in Shakespeare's *Tempest*, 6295
Miriam, Moses's sister, ordered to watch him in cradle on Nile, 1113
song sung by, 1118
Miro, French painter, 3046
Mirror, why does a face seem crooked in? 5981
why do we see in it things that are not in front of it? 1794
Mirror galvanometer, 978
Miser, painting by J. C. Dollman, 2851

Mispickel, arsenical iron pyrites, 1303
Missel thrush, bird, in colour, 2766
Missing Link, what is it? 2539
Missionaries, lives of famous missionaries, 1137
Mississippi, American State, flag, in colour, 6970
Mississippi River, U.S.A., mud carried down by it, 642
Mississippi-Missouri River, great river of U.S.A., 2494
delta diagram, 2493
motor barges on, 2498
three-deck barge, 3692
Missouri, American central State, flag, in colour, 6970
Missouri River: see **Mississippi-Missouri**
Mist, differs from fog, 2866
what makes the mist at night? 5252
on hillside, 4502
Mistletoe, Druids' veneration, 4889
seed and trees it grows on, 206, 2786
seed sown by bird, 948
is mistletoe a pest? 2786
berries, in colour, 3672
clusters on a tree, 205
life-story, 2784
Mitchell, Sir Peter Chalmers, British zoologist, 2022
Mitchell, Scotsman, founder of great shipbuilding firm, 4104
Mite, innumerable species, 5599
various kinds, 5599
Milford, Mary, English novelist, 3582, 3579: see also *Poetry Index*
Mithras, classical god of the Sun, 3519
sacrificing bull, sculpture, 4397
Mittens, how to knit in three colours, with picture, 3229
Miyajima, Japan, coast scene, 6619
Mizar, double star, 3728, 3852, 3851
Mnemosyne, goddess of memory, 3519
Mnesicles, Greek architect, builder of the Propylaeum at Athens in the fifth century B.C.: 5498
Moa, extinct New Zealand bird, 4368
Moabite Stone, found in Palestine, 6983
picture, 6990
Moby Dick, story of a whale by Herman Melville, 4333
Moccasin, water, snake, 4619
Mocking bird, species of, 3025
Cuban mocking bird, 3017
in colour, 3142
Model aeroplane, how to make models that will fly, with pictures, 4829
Models, how to make models from nature, with pictures, 6667
Modern game bantam, fowl, 4253
Modern painters, Ruskin's book, 3220
Modigliani, Amades, French painter, 3048
his painting, the Young Peasant, 3045
Modrzewski, Andrew, Polish political writer, 5027
Moeris, Lake, great Egyptian irrigation lake of ancient times, 6860, 6868
Moffat, Robert, Scottish African missionary, 1140, 3002
finds trail of slave hunters, 3005
portraits, 1137, 2997
Mogadishu, capital and chief port of Somalia, 6754
Mohammed, Arab religious leader, founder of Mohammedanism, 1908, 2280, 6264
rapid conquests of his followers, 6131
teaching of Mohammed, 5086
Mohammed II, Turkish sultan, 687, 6133
mosque in Istanbul, 6141
portrait by Gentile Bellini, 933
Mohammed Ali, Egyptian ruler, 6878
Mohammed Ali Shah, Lucknow, 2281
Mohammedan architecture: see *Saracenic architecture*
Mohammedanism, summed up in a phrase: There is one God, 2280
Arab war-cry throughout East, 2281
Christianity has much in common with it, 2282
in India, 2811
Koran, summary of laws, 5386
rise in Dark Ages, 1903
pilgrims praying at Mecca, 6276
See also Mohammed

Mohammedans, aloe a symbolic plant to them, 2889
great numbers in Nigeria, 3317
kingdoms founded in India, 2944
method of reckoning dates, 2295
Muslim League formed, 2948
Moharraq, island of Bahrain group in Persian Gulf, 6296
Moidore, value of: see old English coins, 7070
Moir, Reid, his archaeological discoveries in Suffolk, 6997
Moir, Gerald, the painter of fine decorative pictures, 2878
Moirae, or **Fates**, Greek goddesses, 3517
Moissan, Henry, French chemist and electrician, 1228
type of electric furnace, 1229
Molasses, Barbados' production, 3556
British Guiana's production, 3558
Mold, capital of Flintshire, site of Hallelujah Battle (in 420), 2644
Moldavia, one of the original principalities of Rumania, 5771
republic of the U.S.S.R., 6014
Russia frees it from Turks, 5398
map, 5904
Molde Fiord, Norwegian inlet, 5150
Mole, burrowing animal, 295, 293
Mole-cricket, wonderful insect, 5716
in colour, 5713
Molecule, Dalton's ideas on it, 6312
defined and described, 483, 4100, 4221, 4346
heat caused by motion of molecules, 5317, 5441
in magnetised iron and steel, 360
movements' rate, 4101
starch has very large molecules, 1048
water boils owing to movement of, 5318, 5321
Molière, Jean Baptiste, French writer of comedies, 4455
A Doctor in Spite of Himself, 4965
The Imaginary Invalid, 3373
The Ready-made Gentleman, 6079, 6072
The Tricks of Scapin, 6215
portrait, 4453
sculpture by Houdon, 4651
Mollinia, purple grass, 3310
Mollusc, family of, 6575
pictures, 6575, 6577, 6580-81, 6585
Möllwitz, battle of, fought in 1741 by the Austrians in their endeavour to recapture Silesia from Frederick the Great, 4311
Moloch, Australian spiny lizard, 4495
Molokai, plight of the outcast leper when Father Damien came, 1142
Moltke, Count Hellmuth Karl Bernhard von, Prussian general, 4298
Moluccas, East Indian archipelago possession disputed, 774
map, animal, industrial, and plant life, 5541
map, in colour, 7097
Molybdenum ore, source in China, 6502
Mombasa, Kenya Colony, 3315
Mompesson, Rev. William, heroism during plague, 2020
Mona and the Forsaken Merman, story, 1891
Monaco, Riviera principality under French protection, 6858
flags, in colour, 6974
general view, 4051
Monal, home and plumage of, 4250
picture, 4249
Mona Lisa, Leonardo da Vinci's famous portrait, 692, 936, 4396, 693
Monasterboice Cross, Co. Louth, 3060
Monastery, Aidan sets up many in England, 2778
arose in Dark Ages, 1908
first established by Pythagoras in Crotona, 1040
medieval architecture in Europe due to monastic Orders, 5744
plan of medieval monasteries, 5745
See also names of monasteries
Mond, Sir Alfred: see Melchett, Lord
Mond, Ludwig, part founder of great chemical firm, 4105, 4102
Monday, origin of name, 5221, 5221
Mondego, Portuguese river, 5402

- Monet, Claude**, French landscape painter, 2929, 3041
his paintings, River in Summer, 2925
Seine at Argenteuil, 2925
Money, story of money, 5389
as capital, 5140
cheque system, 5392
goods in exchange for money, 5390
magic sum of money, trick, 2114
paper money, 5390
saving and thrift, 5140, 5755
how long does money take to double itself at compound interest? 5858
how to make a collection of coins, 5929
what are the grooves round a shilling for? 5001
why is British money called sterling? 6849
earliest known coins, 5391
how it is made: picture-story, 3272
Moneywort, flower, what it is like, 8010
in colour, 6130
Mongolia, vast territory lying north of China, 6500, 6501, 6503, 6510
- Maps of Mongolia**
general and political, 6520
in colour, 7096
physical features, 6518-19
Mongolian pheasant, bird, 4251
Mongolian pony, Shackleton's Antarctic transport, 6554
Mongolian wild horse, picture, 1897
Mongolo, a race of Central Asia, 6503, 6512
Mongoose, animal, 420, 416
Monica, St., with St. Augustine, painting by Ary Scheffer, 3535
Monitor, early American ironclad, 3738
Monitorial system, Bell and Lancaster's educational plan, 4962
Monitor lizard, characteristics, 4496
desert monitor, 4492
Monk, George, Duke of Albemarle, English general and admiral, 1210
Monk, famous monks, 1385
See also Monastery
Monkey, characteristics of family, 165
many kinds found on the Amazon, 7008
their first appearance, 1756
use of fore limbs, 455
various species, 159, 161-4
See also Ape and Baboon and names of Monkeys
Monkey and the Peas, story, 4738
Monkey-eating eagle, 3633
Monkey-flower, yellow, in colour, 6130
Monkey nut: see Pea-nut
Monkeys' Bridge, The, story, 859
Monkey's dinner bell, flying seeds, 949
Monkey's head: see Baobab tree
Monk-fish, 5096, 5105
Monk seal, animal, 909
Monmouth, capital of Monmouthshire, arms of town, in colour, 4991
bridge over the River Monnow, 1711
general view, 1714
Monnow Street, 7152
Monmouthshire, English county, places in, 7165
road map, 7152
Monochlamydeae, 6496
Monochord, what it was, 5614
Monocotyledons, 705, 6490, 6496
Monopetalae, 6491
Monoplane, pictures of various types, 4687-89
See also Aeroplane
Monotony, human mind's intolerance of it, 1613, 5017
Monotremata, animal family, 2515
Mono-valent, chemical term, 4347
Monreale, Sicily, architecture of cathedral, 5746
cathedral, 5748, 5752
monastery cloisters, 5748
Romanesque columns, 5753
Monro, Harold, English poet, 4082
Monroe Doctrine, Washington laid foundation, 3794
Monroe, James, American president, 4622, 7004, 3791
Mons, Belgium, British army's retreat from in First World War, 1708
Monsoons, winds bringing rain to India and neighbouring countries, 2818-9
low clouds near Darjeeling, 2743
- Montague**, Charles Edward, English writer, 3830
portrait, 3827
Montagues, who they were, 4387, 6161
Montagu's harrier, bird, in colour, 3022
hiding its eggs, 3631
Montaigne, Michel de, French essayist and philosopher, 2969, 4454, 4453
Montana, American State, flag, in colour, 6971
explosion during search for oil, 3087
geologist examining rocks in search for oil, 3087
mountain road, 3806
Mont-aux-Sources, mountain in Basutoland, 3311
Mont Blanc, highest mountain in Alps, 4164, 2247
climbers on Bossons glacier, 2132
general view, 2130
Montcalm, Marquis Louis de, French general, 1330
against Wolfe at Quebec, 2319
Mont Cenis Tunnel, engineering feat, 4674, 6595
route into Italy, 4910
picture map, 4794
Mont d'Or, length of tunnel, 6598
Monte Carlo, town of Monaco, 6853
Montemayer, Jorge, Spanish poet, 5059
Montenegro, region of Yugoslavia, 4555
Monte Video, capital and port of Uruguay, 7018; views, 7015
Montfort, Simon de: see De Montfort
Montgolfier, Jacques Etienne, French inventor, 19, 4445
Montgomery, Field-Marshal, Viscount, belief in physical fitness, 3222
El Alamein triumph during Second World War, 1944
Montgomery, James, imprisoned for ballad on fall of Bastille, 1585
See also Poetry Index
Months, their story, 5335
Mont Pelvoux, one of the Alps, 2246
Montreal, Canada's largest city and chief port, 2192, 2195
lumber jam on river, 2193
scene, 2328
Victoria Bridge, 555
Victoria Square, 3227
Montrose, Marquess of: see Poetry Index
Mont St. Michel, famous monastery buildings, 5989, 4178
Montserrat, Leeward Islands, 3554
Monument, is there a monument to a seagull? 5983
Monument, The, Lo Lion, marks spot where Great Fire broke out, 1212, 1218, 6239
Monvel: see Boutet de Monvel
Moody, Dwight Lyman, American evangelist, 1758, 1759
Moon, Earth's only child, 3477
bit of Earth that broke off, 16, 140
distance from Earth, 140
facts and figures, 7061
full Moon explained, 6975
Jupiter's moon, 3353
Man in the Moon legend, 1149
radar echo obtained from, 2464
revolutions studied by Newton, 6310
Saturn's moon, 3354
studied by Galileo, 3610
Uranus's moon, 3356
- Wonder Questions**
are there people on the Moon? 818
does the Moon pull the sea? 4637
is there a man in the Moon? 2171
what is a Blue Moon? 3163
why can we see the whole circle when it is not shining? 6227
why does it grow brighter as the Sun sets? 5618
why does it look so big when low down over the sea? 5246
why does it not make waves on rivers? 6603
will the Earth become like it? 2043
would the Earth seem to be up in the sky if we were on the Moon? 4760
- Pictures of the Moon**
crescent Moon photographed, 3485
distance from Sun, 17
Earth seen from the Moon, 3479
- effect on waves, 4637
four phases, 3482
its path round the Earth, 3477
lunar volcanoes, 3483
moons and planets, 15
mountains and craters, 2171, 3480
north pole of the Moon, 3481
radar used in contacting, 2467
telescopic view, 18
Moon Maid, The, story, picture, 2512
Moon silk-moth, of India, caterpillar, in colour, 6210
Moonstone, form of orthoclase, 1301
Moontwort, fern, in colour, 1793
spore case open and closed, 947
Moore, Albert, English painter, 2544
his paintings, Follow my Leader, 3223
The Quartette, 2550
Moore, George, Irish writer and stylist, 3827
Moore, Henry Spencer, English painter and sculptor, 2878, 4398
his sculpture, Three Figures, 4895
Moore, Sir John, Scottish general, killed at Corunna, 1458
Prayer Book used at burial, 4864
Moore, Thomas, Irish poet, 1266, 3954
his portrait, 3953
with Lord Byron at Twickenham, 1267
See also Poetry Index
Moore, T. Sturge, English poet, 4082
Moorgate, London, once a Roman gate, 590
Moorhen, hiding from danger, 4004
in colour, 3023
Moorhouse's comet, its career, 3607
Moorish architecture: see Saracenic architecture
Moorish toad, amphibian, 4741
Moors, culture of Spain under, 637
defeat by Charles Martel, 2521
Ferdinand and Isabella drive out
Moors, 1307
invasion of Spain, 5272
tribes follow Mohammed, 2232
Moose: see Elk
Morales, Luis de: see De Morales
Morality play, beginning of English drama, 857
Moral Law, Cretans' lack of leads to their downfall, 796
Greek thought's basis, 916
Israelite pioneers, 545
men and women should have one standard, 2353
necessary to civilisation, 496
Moran, Thomas, American landscape painter, 3287
Bringing Home the Cattle, 3291
Moratin, Leandro de, Spanish writer, 5059
Morava, River, Yugoslavia, 4556
Moravia, ancient kingdom included in Czechoslovakia, 4554
Mordaunt, Thomas Osbert: see Poetry Index
Mordecai, Esther brought up by, 3255
honoured by Ahasuerus, 3226
supposed tomb at Hamadan, 6395
Morden College, Blackheath, 6239
More, Sir Thomas, English statesman, philosopher, and writer, 1081
friend of Erasmus, 4956, 7054
Holbein's patron, 6673
brings Holbein to his home, 6677
Moreau, Gustave, French painter, 2930
his painting, St. Cecilia, 2926
Morecambe, new road to Bolton-le-Sands, 2165
Morel, common, edible fungus, 3411
Morelli, Domenico, his paintings Calvary, 4825
Herod mocking Jesus, 4705
Moreslos, Mexican patriot, 7004
Moresnet, Belgian territory, 5650
Moreto, Agustin, Spanish writer, 5359
Moreton Old Hall, courtyard, 1085
Moretto, Alessandro Bonvicino, Italian painter, 935
portrait of a nobleman, 940
Morgan, Charles Langbridge, English writer, 3830
Morgan Le Fay, his revenge on King Arthur, 6943
Morgarten, battle of, fought in 1315 between 1500 Swiss patriots and 15,000 Austrians, 4670, 4677

Morisot, Berthe, French painter, 3042
her painting, *A Summer's Day*, 3045
Morisot, Henri, his painting *The Book*, 7218
Morland, George, English painter, 5700
his fine animal pictures, 2544
Horses in Stable, painting, 2555
self-portrait, 5695
Morley, Christopher Darlington, American writer, 4335
Morley, John, Lord, English statesman, 3827
on *Rousseau*, 4258
his portrait, 3827
Morocco, North African country, 6749
French protectorate, 4049, 6744
Spanish territory in, 5276, 6753

Pictures of Morocco

Arab merchants taking coffee, 6746
flag, in colour, 6974
ladies of Morocco, 6745, 6746
mother and child, 6748
scenes, 6760-61, 6764
map, in colour, 7098
Morocco City: see *Marrakesh*
Moroni, Gianbattista, Italian painter, 935
his painting of a nobleman, 3778
portrait of a tailor, 937
Morpheus, mythological demigod, 3520
painting by *Reynolds-Stephens*, 3524
Morris, George P.: see *Poetry Index*
Morris, Sir Lewis: see *Poetry Index*
Morris Track-layer, pre-fabricated railway tracks being laid, 3951
Morris, William, English poet and artistic decorator, 4078
campaign to beautify the home, 5454
revival of sound building and craftsmanship in nineteenth century architecture, 6806, 6809
his portrait, 4077
tapestry designed by him, 6731
See also *Poetry Index*
Morris, William, Lord Nuffield, motor manufacturer, 4111; portrait, 4102
See also *Motor-car*
Morrison, Charles, Scottish surgeon, 1601
electrifying pith balls, 1601
Morrison, Robert, English missionary, 1138, 1137
Morse code, what it is, 1470
Morse key, what it is, 1469
Morse, Samuel, American electrical engineer, 1602; portrait, 3359
Mortar, how it is made, 2414
Morte d'Arthur, Malory's great prose work, 363, 366
Mortgage, what the term means, 5639
Morton, William, American dentist, first to use ether as anaesthetic, 2508
Mosaic, ancient craft, 6732
in Byzantine architecture, 5742
Roman pavements, 446

Pictures of Mosaic Work

defeat of *Darius*, 3129
examples from *Ravenna*, 74, 445
figure of the *Virgin*, 447
from *Sicily*, 443
in church at *Ravenna*, 449
in *St. Mark's Venice*, 445, 447
mosaic designed by *Cimabue*, 6736
on *Mosque of Omar*, 5632
picture of *Mary and Jesus*, 447
picture of *St. Michael*, 445
Mosasaurs, reptile, 1635
fossil remains, 1635
Moschatel, of genus *Adoxa*, 6493, 4290
Moscice, town of *Poland*, 5032
Moscicki, President, noted Polish chemist, 5032
Moscow, capital of *Russia*, 6021
capture by *Tartars*, 5893
taken by *Poles*, 5894
church of *Nativity*, 5752
church of *St. Basil*, 5749
apartment house near *Radio Station*, 6027
general view, 6026
Ivan Veliky tower, *Kremlin*, 5903
planetarium, 6026
Sukharev tower, 6026
workers' dwellings, 6029
See also *Kremlin*

Moscow, Retreat from, *Napoleon's* defeat, 1458, 4046
Meissonier's painting, 1448
Verestchagin's painting, 1445
Moselle, river of *Germany*, scenes, 4435
Moses, Bible story, 1113, 1239
health pioneer, 544, 2502
his connection with *Egypt*, 6877
law-giver of the *Jews*, 6798
mighty figure by *Michael Angelo*, 4534

Pictures of Moses

before *Pharaoh*, 1115
breaking *Tables of Covenant*, 6803
bringing *Commandments* down from mountain, 1241
floating in *cradle* on *Nile*, 1113
found in *bulrushes*, 1112
his hands held up during battle, 1238
picture to poem on his burial, 1223
praying in *tabernacle*, 1243
sculpture by *Michael Angelo*, 4529
speaking to *Israelites*, 1115
talking to sons of *Levi*, 1238
viewing the *Promised Land*, 1238
Moshesh, Basuto leader, 3311
Mosque, features of mosques, 5624, 5627
Istanbul mosques, 6141
Junma Musjid, *Ahmedabad*, 2279
Pearl Mosque, *Delhi*, 2279
Mosquito, or gnat, life-story, 6083
carriers of *malaria*, 2626, 6083
Gorgas conquers pest in *Panama*, 4869
life-story of *buffalo gnat*, pictures, 5489
war on mosquitoes at *Ismailia*, 2627
yellow fever spread, 2627, 6083
gnat emerging from *cocoon*, 6083
spotted mosquito's *chrysalis*, 6082
under microscope, 1913, 1916
wing under microscope, 1911
Mosquito, aeroplane, manufacture, 6337-42
Moss, life-story, 704
Ruskin's description, 3412

Pictures of Moss

life-story of hair moss, 1069
on old wall, 3409
Spanish variety, 3059
spore capsules opened and closed, 947
various kinds, 3408
See also under specific names
Moss campion, of *Pink family*, 5519, 5521
Moss-cupped oak, fruit, in colour, 3671
Moss tree, in *Devonian Age*, 1136
Mossy heterodactyle anemone, in colour, 1556
Mossy saxifrage, 5519, 5521
Mostar, *Yugoslavia*, 4556
Roman bridge, 4562
Mosul, town of *Iraq*, on the *Tigris*, 6268
Moth, big insect family, 6197
emergence from *chrysalis*, 6211
service and destruction, 6212
does camphor keep moths away? 6100
is there a moth that stings? 3650
why do moths fly round a light? 4640
why is its tongue so long? 2044

Pictures of Moths

antenna under microscope, 1912
British species with caterpillars, in colour, facing 5935
caterpillars of foreign kinds, 6209-10
clothes moth's life-story, 4393
dust from wing under microscope, 1913
foreign moths, in colour, 1417-20
head under microscope, 1915
humming-bird hawk, in colour, 2045
laburnum moth under microscope, 1911
most wonderful moth in world, in colour, 1420
See also specific names
Mother, 372, 1616, 6225
map showing spread of name, 562
mothers of famous people, 4131-35
Motherhood, 2309, 4230
Mother Hubbard's Tale, poem, by *Spenser*, 742
Mother Nature and her Children, 43
Mother Nature's Spring Helpers, story with picture, 5833
Motherwort, flower, in colour, 4286
Motifs, how to make in *crochet*, with pictures, 3351
Motion, what is it, 113, 4593
heat a form of motion, 5317

how movement of *Earth* is known, 265
Kepler's laws of planetary motion, 4713
light due to motion in ether, 4594, 5689, 5818
molecular motion, 5317, 5441
Newton's first law explained, 6346
Newton's three laws, 4596, 6309, 6730
do all things move in space? 6233
how do we know that the *Earth* is in motion? 6233
what does perpetual motion mean? 5738
its effect on matter, 4593
movement of wind and water, 112
Motley, John Lothrop, American historian, 4336
Motmot, bird's characteristics, 3280
pictures, 3254, 3261
Motor, electric, 106
Motor-car, all about it, 4319
development of the industry, 4111
division of labour in *Ford's* works, 5017
effect on transport, 4330
safety first rules, 6837
United States has more than rest of world, 3681
why do motor-cars have numbers? 4994

Pictures of Motor-cars

car inside trunk of tree, 456
cars in a traffic block, 4325
chassis parts, diagram, 4320-21
early types of cars, 4318
electric cars, 737
four-cylinder engine, diagram, 4321
in the open country, 4325
manufacture of, series, 3761-68
Rolls-Royce car, 4319
six-cylinder engine, diagram, 4322-23
Motor cycle, how the engine works, 4319
how two-stroke engine works, 4329
parts, diagram, 4326-27
Motor engine: see *Internal combustion engine*
Motor-tractor, used for hauling timber, 5355
Motor tyre, how motor tyres are made, with pictures, 1409-1412
Mouffon, animal, 1283, 1282
Mould, member of *Fungus* family, 3411
what it is, 1440
Moulding Press, use in printing, 2409
Moulin, *Hippolyte*, his sculpture, *A Find* at *Pompeii*, 5011
Mounstephen, *Lord George*, financier of *Canadian Pacific Railway*, 2320
Mount Abu, *India*, Jain temples, 5626
pictures, 2952-3, 5083
Mountain, how mountains were made, 518, 641, 2245
cause of mountain sickness, 5199
England's great and little hills, 461
height can be told by barometer, 5199
highest mountains, 7059
influence on rainfall, 2621, 2867
mountain flowers, 5517
how do we know its height? 309
is it higher in hot weather? 3395
what are the highest mountains? 5620
what is the wind like on a mountain top? 4394
why do mountains get no higher? 1414
why is it colder on a mountain-top? 5004
England's great and little hills, picture series, 469-474
height measured by barometer, 5199
how ranges were formed, 520
mountain flowers, in colour, 5641-42
road up *Stelvio Pass*, *Italy*, 2169
why we find sea shells on them, 643
See also names of mountains
Mountain ash, or rowan tree, 4038, 6492
fruit, in colour, 3672
with flowers and leaves, 4159
Mountain avens: see *White dryas*
Mountain bedstraw, 5520
flower, in colour, 5641
Mountain bladder, fern, in colour, 1797
Mountain buckler, fern, in colour, 1800
Mountain crane's-bill, 4418
flower, in colour, 4420
Mountain everlasting: see *Cat's-foot*
Mountain forget-me-not, 5518
flower, in colour, 5641
Mountain groundsel, 5022
flower, in colour, 5143
Mountain meadow saxifrage, 6492

Mountain pansy: see Yellow mountain violet
Mountain polypody, fern, in colour, 1798
Mountain quail, in colour, 3263
Mountain ringlet butterfly, with egg, caterpillar, and chrysalis, in colour, 6204
Mountain sorrel, 5520, 6496, 5521
Mountain speedwell, in colour, 4908
Mountain thyme, of labiate family, 5520 flower, in colour, 5641
Mountains of the Moon, fabled name for the Ruwenzori range in Uganda, 3316
Mountbatten, Lord Louis, Viceroy of India during independence efforts, 2948
Mount of Olives, view, 3470
Mount of Temptation, view, 3466
Mount Palomar, San Diego, California, world's biggest telescope, 3976
 dome of telescope, 3685
Mourne Mountains, Ireland, 3061 granite with curious weathering, 2007 scene, 3070
Mouse, the species, 1036
 damage done in Great Britain, 1029
 jumping mice, 1035
 diagram showing backbone, 453
 harvest mouse, 1032
 house mouse, 1032
 See also under specific names
Mouse deer: see Chevrotain
Mouse-ear chickweed, 6492
Mouse-eared hawkweed, flower, in colour, 4287
Mouston, flower, in colour, 4664
Moussorgsky, Modeste Petrovitch, Russian composer, 4820
Mouth, uses of its parts, 1929
 breathing by the mouth, 1318, 1320
 origin of word, 2296
 position of teeth, diagram, 1931
Movement: see Motion
Moving staircase: how it works, 683
Mower, The, sculpture by Sir W. H. Thornycroft, 4772
Mozambique, Portuguese East African settlement, 6753
Mozart, Wolfgang Amadeus, Austrian composer, 146
 portrait, 145
 statue of at Salzburg, 4560
Mubarratz, town of Arabia, 6265
Much Ado About Nothing, story of Shakespeare's play, 6046
Muckross Head, Donegal, 3070
Mucous membrane, 1931
Mud, originated from rocks, 518, 641
 quantity carried down by rivers, 2493
 volcanic mountains made of it, 2248
Mud eel, amphibian, 4745
Mudfish, lungs enable it to sleep through dry season, 4857
 African mudfish, 4745
Mud volcano, in New Zealand, 2132
Muirck, Loch, Aberdeenshire, 2132
Muirhead, David, painter, 2677
 Stonehaven harbour, painting, 2671
Mukden, town of Manchuria, 6511
Mulatto, meaning of word, 7002
Mulberry, tree, 1936, 3786
 paper made from its bark, 1292
Mulberry Bush, The, rhyme, music and picture, 6037
Mule, animal, 1900
 frame for cotton spinning, 176
Müller, Max, on number of words in English language, 5251
Müller's phalacrognathus, beetle, in colour, 6336
Mullet, fish, 5101
 grey mullet, in colour, 5097
 red mullet, in colour, 5097
Mullet, as heraldic charge, 926
Mullion Cove, Cornwall, view, 346
Mulready, William, Irish painter, 2544
 his painting, Giving a Bite, 3780
Multiplication, how to multiply by nine or ninety-nine, 4591
Mummy, Ancient Egyptian religious rite for preserving the bodies of the dead, 6874
 Egyptian wrapping ceremony, 6862
 ancient picture from Egypt, 323
 Egyptian types, 6864
Mumtaz Mahal, Shah Jehan's wife, 2945
Munich, Bavaria, 4428

architecture of cathedral, 5991
 church of St. Michael, 6372
 Dürer's masterpiece, The Four Evangelists, 1193
 Greek sculpture from Aegina, 4028
Munnings, Sir Alfred, P.R.A., English painter of horses, 2677
 The Green Wagon, 2675
Munro, Neil: see Poetry Index
Münster, German cathedral city in Westphalia, Romanesque altar-panel, 450
Muntjac, deer, 1404
Mural crown, in heraldry, 4986
Murat, Caroline, attempt to excavate Pompeii, 6995
Murat, Joachim, king of Naples, 1456
 charging at battle of Jena, 1449
Murcia, Moorish city in south-east Spain, 5278
 street market, 5282
Murdock, William, Scottish inventor, pioneer of lighting by coal gas, 2748, 3332
 locomotive made by him, 2747
 steam-driven motor, 4318
Murex, shell, 1180, 6581
Muriatic acid: see Hydrochloric acid
Murillo, Bartolomé Esteban, Spanish religious and genre painter, 1312, 6680
 his portrait, 6673
 painting in Seville, 6677

Pictures by Murillo

Holy Family, 1662
 Infant Jesus and infant St. John, 1311
 Madonna and Angels, 1309
 Madonna and Child, 1309
 Spanish flower-girl, 3535
 Spanish peasant boy, 3656
 Virgin and Child, in colour, 1661
Murmansk, port of Russia, 6024
Murray, Charles, Scottish poet, 4206
Murray, Sir David, Scottish landscape painter, 2545
Murray, Dr. George, discovery about the glands, 3174
Murray, Professor Gilbert, British scholar and idealist, 3829
 on Greek idea of beauty, 1484
 translations from Greek literature, 5181
 portrait, 3827
Murray, John, started fund to help Layard with Assyrian excavations, 6870
Murray River, Australian river, Barker discovers its mouth, 6068
 its basin, 2569
Sturt's great voyage, 6066
 dam at Blanchetown, 5972
 map showing course, 2451
Murren, Switzerland, ski-ing, 4671
Murrumbidgee, river of New South Wales, Sturt traces its course, 6066
Muscat, port of Oman, Arabia, 6266
 harbour entrance, 6276
Muscles, servants of the nerves, 1809
 more efficient than any machine, 5443
 muscular spasms, 4996
 diagrams, 1809-11
Muscovite, potassium mica, 1304
Muscovy, Russia's old name, 5893
Muscovy duck, 3754, 3753
Muses, goddesses of arts, 3517
Museum, for bird lovers, 2612
 picture-museum of history, 4859-64
 See also British Museum, and so on
Mushroom, edible fungus, 2542, 3411
 picture-story of its life, 1439
Mushroom Rock, Kenmare, Kerry, 2007

MUSIC

For Songs and Rhymes with Music see Poetry Index under Songs.
 The following are actual headings of the chapters on music in the section of School Lessons
 The Sounds We Hear, 134
 The Names of Sounds, 262
 More About the Names of Sounds, 390
 Clefs and Staves, 513
 Melodies for Voices, 636
 Musical Dialects, 760
 Time-keeping, 880
 Contrasts and Moods, 1004
 Tones and Semitones, 1128
 Musical Arithmetic, 1254
 The Meaning of Dots, 1376

Colour in Sound, 1499
 The Rest of the Orchestra, 1629
 The Importance of Silence, 1749
 Flats and Some More Sharps, 1872
 Journeys in Music, 1995
 Sounds Together, 2120
 Melody in the Making, 2239
 From Major to Minor, 2364
 More About Minor Keys, 2489
 Rhythm Again, 2613
 Reading and Listening, 2737
 How and Why? 2861
 What Is It All About? 2985
 Music, analysis and theory, 6180, 6303, 6425
 discord produced by interference in sound waves, 6429
 hearing-centre in brain and music, 2935
 notes of the scales and their ratios, 6304
 voice and its wonderful chords, 6427
 what do we mean by form? 5737
 what is a sonata? 5737
 sculpture by John Börjeson, 5254
 Singing the Old Songs, 1427
 The Interval, painting, 3780
 Village Choir, 6305
 Young Piper, sculpture, 5014
 See also Harmony, Oratorio, Sound, and so on
Musical chairs, with a difference, game, 504
Musical instrument, how to make a musical instrument from bottles, 521
 music from drinking glasses, with picture, 1495
 why their sounds vary, 6308
 See Organ, Pianoforte, and so on
Musicians, men who made the world's music, 141
 colleges set up in Rome by Gregory, 2280
 mind of a musician, 4150
 portraits of famous composers, 145
Musk, stigma sensitive to touch, 586
Musk beetle, in colour, 6335
Musk deer, 1404, 1403
Musk mallow, flower, in colour, 4417
Musk ox, Arctic species, 1286, 1280
Musk rat: see Musquash
Musk-shrew, 296
Musk thistle, 5266, 6493
 flower, in colour, 5394
Muslac, Donegal, geology of cliffs, 2004
Musonius, Caius Rufus, Roman philosopher, of the first century A.D., 3240
Musquash, animal, 1035, 1031
Muschenbroek, Pieter van: see Van Muschenbroek
Mussel, its characteristics, 6578
 how does a mussel build its shell? 1176
 used for binding breakwaters, 4857
Mussel bed in Holland, 5731
 shells of various kinds, 1177, 6580
 swan mussel five inches long, 6577
Musset, Alfred de, French writer and poet, 3958, 4457
Mussolini, Benito, Fascist dictator of Italy, 4783
 allies Italy to Germany during Second World War, 1941
 his death, 1946
 his interest in archaeology, 6994
Mussulmans: see Mohammedans
Mustapha Kemal: see Atatürk, Ghazi Mustapha Kemal
Mustard, species of plant, 2808
 why does mustard burn our tongue? 6101
 Black mustard in flower, 2802
 hedge mustard flower, in colour, 4286
Mute swan, bird, in colour, 2765
Mutton, New Zealand's export, 2698
 Southdown mutton's quality due to snails, 1284
Muttrah, port of Oman, Arabia, 6266
Muybridge, Edward, adapts photography to zoetrope, 6704
Muzzlet anemone, different kinds, in colour, 1554
Mweru Lake, Central Africa, discovered by Livingstone, 3003
Mya shell, 6580
Mycenae, early art centre, 322, 4024
 Pelagic buildings, 5380
 Schliemann's discoveries, 6986
 beautiful vase of Mycenaean period, 4025
 Gate of Lions, 4032

tomb of Agamemnon, 6993
 treasury of Atræus, 5383
My House is Red, rhyme picture, 356
My Lady's Garden, rhyme picture, 1341
Mylae, sea-fight off Sicily, 4795
Myllar, Andrew, first Scottish printer, 1517
My Lord Bag-of-Rice, story, 6822
Myna, mimicking birds, 2894, 2893
Myosotis, plant, 6493, 6384
My Pretty Maid, rhyme picture, 4936
Myrianida, sea worm, 6827
Myrina, buried city in Asia Minor, 4026
Myron, ancient Greek sculptor, 4142
 his sculptures, the Discobolus, 4141
 Marsyas, 4148
Myrrh, 2691, 2938
Myrtle, bog myrtle flower, 5891
Mysore cattle, 1155, 1159
Mysterious bottle, trick, 754
Mysterious Portrait, story, picture, 2759
Mystery play, beginning of English drama, 857, 5860
Mythology, Greek and Roman, 3513
 See also names of Greek and Roman gods, and so on
Mytilene, island in the Aegean Sea, harbour, 5769
Myxoedema, thyroid extract cures, 3174

N

Naaman, Bible story, 2727
 before King of Israel, 2727
 maid speaking to his wife, 2726
Nablus, ancient capital of Samaria, Palestine, 6289
 view, 3469
Nabonidus, last Babylonian king, 6802
Nabopolassar, Babylonian ruler who overthrew Assyria, 6386
Naboth, Bible story, 2606
 Ahab offers to buy his vineyard, 2604
Nacre, oyster's pearl fluid, 5234
Nadir Khan, King of Afghanistan, 6392
Naerodald Valley, Norway, 5158
Naevius, Cnaeus, Roman dramatic and epic poet, 5426
Nagana, disease conveyed to domestic animals by tsetse-flies, 6088
Nagarcoil, temple of, 5083
Nagasaki, port of Kiushiu, Japan, accepts Christianity, 6618
 atom bomb attack on in Second World War, 1948
 Dutch privilege to trade with, 6620
Naiad, mythological nymph, 3530
Naidu, Sarojini, Indian poet, 4206
Nail (anatomy), description, 1430
 what makes the white marks on our nails? 563
 greatly magnified, 1429
Nail (carpentry), house which contains a quarter of a million, 2526
 what to do with nails and screws, 253
 why has a French nail grooves at the top? 5620
Nailsworth, stone quarry, 5850
Nain, view, 3467
Nairne, Carolina, Lady, Scottish writer of songs, 1266: portrait, 1261
 See also Poetry Index
Nairobi, capital of Kenya Colony, 3315
Nais, beaked, worm, 6827
Najaf, Moslem holy city, 6390
Nakadah, relics of pre-dynastic Egyptians found there, 6868
Naked-throated bell bird, 3137
Nakuru, Kenya, white settlement in Great Rift Valley, 3315
Name, buried names, puzzle, 2234
 how to make name pictures, 384
 what does the name of England mean? 4758
 why are names not used in Parliament? 5364
 why do we have names? 5618
Namur, Belgian cathedral city, view, 5654
Nancy, French city, 4170
Nanking, southern capital of China, 6501, 6504, 6509, 6510
 cultivated bamboos, 2936
 main street, 6498
Nanking, Treaty of (1842), Chinese ports thrown open to foreign ships, 6509
Nanling, Chinese mountain range, 6501
Nannar, Moon God, and patron of Ur, excavation of temple, 6871

Nansen, Dr. Fridtjof, Norwegian Arctic explorer, 4942, 6438
 leaving Fram with Johansen, 6443
 meeting-place with Jackson, 6441
 meeting with Jackson, 6443
 outside Jackson's hut, 6443
 portrait with parents, 4133
 relating adventures, 6447
Nantan, Chinese town, 6509
Nantes, port of France, bronzes by Dubois on tomb in cathedral, 4648
 tomb of Francis of Brittany, 4644
Nano, Bible story, 1617
 Ruth appealing to her, 1619
Naphthalene, its production, 4472
Napier, John, Scottish mathematician, 6309, 6974
Naples, city of Italy, 4912, 4913
 catacombs at Naples, 444
 sculpture in museum, 4140, 4396
 scenes, 4924, 4926
Napoleon I, Bonaparte, French soldier, statesman, and emperor, 1441, 4371
 abdication and exile to Elba, 1458, 4046
 brothers made kings, 4046, 5530
 coalition against England, 1454
 crowned king of Italy, 1455, 4736
 death at St. Helena, 1458
 Egypt systematically explored, 6860
 exiled to St. Helena, 4048
 French art during his time, 1803
 Paris revolutionaries checked, 4044
 Russia's attitude towards, 5895
 Saragossa's resistance, 6840
 steamship offered him by Fulton, 3734
 Waterloo, 1458
 what was the Code Napoléon? 6726

Pictures of Napoleon

as a boy at military school, 1446
 before Moscow, painting by Verestchagin, 3779
 body leaving St. Helena, 1457
 burial-place on St. Helena, 3561
 captive on board Bellerophon, 1448
 coronation, by J. L. David, 1805
 crossing the Alps, 1456
 dictating memoirs at St. Helena, 1441
 escaping after Waterloo, 1447
 funeral, 1457
 in peasant's cottage, 4371
 looking toward England, 1451
 portrait, with parents, 4135
 refusing Fulton's steamship, 3737
 retreat from Moscow, 1445
 riding in burning Moscow, 3402
 riding on sands at Boulogne, 1449
 statue in Paris museum, 75
 tomb at Invalides, 1457, 4172
 1814, painting by Meissonier, 1448
Napoleon III, emperor of France, 4048
 Italian liberation taken up by, 4797
 surrendering to Bismarck, German Chancellor, 4301
Napoleonite, volcanic rock found in Corsica, 2004
Narcissus (myth), story of Echo and, 3530, 6823
 painting, by J. W. Waterhouse, 3522
 sculpture found at Pompeii, 4897
Narcissus, flower, 6378
 See also Daffodil
Nares, Sir George, English Arctic and deep-sea explorer, 6435
 Antarctic voyage, 6550
 portrait, 6431
Narrow-fruited corn-salad: see Toothed corn-salad
Narrow-leaved everlasting pea, 4782
 flower, in colour, 4905
Narrow-leaved hawkweed, 4782
Narrow-leaved vetch, 4416
 flower, in colour, 4418
Narrow-leaved water pansnip, 6012
 flower, in colour, 6130
Narwhal, sea animal, 2149, 2151
 tusk which Froisher gave to Queen Elizabeth, 5206
Nasal bot-fly, insect, 6082
Naseby, battle of, Cromwell's decisive victory over Charles I, 622
 Cromwell on field, 4005
Nash, John, architect in London, 6472, 6606
Nash, Paul, English artist, 2678
 Battle of Britain, painting by, 2675
Nasmyth, James, Scottish engineer, 5946

portrait, 4131
 sketching the Rocket, 5941
Nassau, capital of the Bahamas, 3554
 Government buildings, 3561
 native with silk cocoons, 3557
Natal, South African eastern province, including Zululand, 3187

Pictures of Natal

Albert Falls, 2129
 arms, in colour, 4985
 Durban street scene, 3189
 Howick Falls, 2227
 natives outside their huts, 3190
 riders in the National Park, 3182
Nathanael, probably same man as St. Bartholomew, 6791
Natica, shells, 1179
Nation, difference in nations and its causes, 2127
 different stages of civilisation, 87
 vision of a nation, 1380
 can a nation be made to pay for a war? 6354
 which is the biggest nation? 2041
National Anthem, built on Psalms, 2110
 by whom was it written? 6849
National Assembly, in France, 4043
 summoned by king, 3924
National Assembly, Persia, 6390
National Assistance Act (1948), 6256
National Debt, incurred by First World War, 1710
National expenditure, in peace and war, 4658
National Gallery, Wilkins builds it, 4223
 view, 4513
National Guard, French citizen force, 650, 4044
National Health Service Act, 6256
National Income and Expenditure, statistics, 5757
National Insurance (Industrial Injuries) Act, 6256
National Parks, in the United States, 3676
Nationalrat, Swiss house of Parliament, 6856
Nativity, The, Van der Goes's picture in Florence Academy, 1057
 Edelfeldt's Adoration of Wise Men, 3588
 Fra Angelico's painting, 570
 series, in colour, 1661-1664
 Von Uhde's painting, 3594
Natrolite, needle stone, mineral, 1304
Natterer's bat, 290
Natterjack toad, amphibian, 4743
 in colour, facing 4469
Natural day, what it is, 5122
Natural History Museum, largest and smallest mammals, 2021
 meteoric stones, 3608
 termite's ravages illustrated, 5716
Nature, general account of, 2225
 energies directed by man, 1616
 how to make models from Nature, with pictures, 6687
 its movement directed, 617
 man's triumph over Nature, 2622
 successes and failures in Nature, 38
 is everything a part of Nature? 3280
 cycle of life, 85
 gifts of Nature (colour), 5-8
 Mother Nature and her little ones, 42
 See also Laws of Nature
Nature Study: see Botany
Naukratis, Greek settlement in Egypt, 6867, 6877
Nauru, Pacific island, 3428
Nautical almanac, what is it? 3279
Nautical day, what it is, 5122
Nautical Measures: see 7069
Nautilus, characteristics, 6538
 nautilus shell, 1180, 6580
Naval crown, in heraldry, 4986
Navarino, battle of, sea fight in the Greek War of Liberation, 4622, 5781
Navarre, Queen of, sacrifice for Huguenots, story, 6682
Navigation, radar aids in, 2462
Naville, Edouard Henri, Swiss Egyptologist, 6867
Navy, origin of word, 2158
 Navy, British: see British Navy
Nazarenes, who they were, 5807
Nazareth, ancient city of Galilee, the home of Jesus, 6269

- Church of the Annunciation, 6279
 Mary's well, 3467; views, 3463
 water-carrier, 6263
Nazi Party, rise and fall, 4302, 4624
Neale, John Mason, English writer of hymns, 1758
Neapolitan mud flower, sea anemone, in colour, 1555
Near East, map, in colour, 7093
Nebo, Assyrian god, sculpture, 3899
Nebo, Mount, Moses views Promised Land from it, 1244
Nebraska, American State, flag, in colour, 6971
Nebuchadnezzar, Babylonian king 605-562 B.C., 3101
 Hanging Gardens of Babylon, 4884
 Israel conquered by him, 2980
 palace in ancient Babylon, 5377
Nebula, what it is, 137, 3973
 Laplace's theory, 3356
 in the Milky Way, 3854
 planetary, 3113, 3974
 spiral nebula in Great Bear, 3975
 trifid nebula in Sagittarius, 3978
Nebulium, an element, 4223, 2918
Necho II, Egyptian king who sent the Phoenicians to explore Africa, 770
Neckar, German river, 4422
Necklace, 16th-century Italian, 6734
 Saxon, 725
Necklet anemone, flower, in colour, 1554
Nectar, how bees collect it, 5837
 produced by flowers, 352
Needle, how needles are made, with pictures, 4644
 how to drill a hole in a pin with a needle, with picture, 6300
 why is a needle no heavier when magnetised? 682
 eye of needle under microscope, 1911
Needle, shepherd's, flower, in colour, 4664
Needlecase, how to embroider, with pictures, 2487
Needles, The Isle of Wight, view showing lighthouse, 337
Needle whin, what it is like, 5020
 flower, in colour, 5142
Needlework, cross-stitch design, with pictures, 3846
 embroidery, border, with pictures, 2610
 embroidery on a needlecase, with pictures, 2487
 French seams and faggot stitching, with pictures, 2735
 gifts in felt, with pictures, 6175
 handkerchief satchel in quilting, with pictures, 4465
 needlework notions, 4094
 patchwork from the piece bag, with pictures, 3971
 stitches, easy ones for beginners, with pictures, 2359
 tucks, shell edging, and hemstitching, with pictures, 2860
 See also Embroidery, and names of stitches
Nefertiti, Queen, sculpture of her head carried to Berlin, 6867
Negeb, desert region of southern Palestine, 6268
Negri Sembilan, Federation of Malaya, 3424
 flag, in colour, 6967
Negritos, aboriginal inhabitants of Philippines, 6514
Negroes, number in United States, 3677
 place in British Empire, 2072
 republic in Haiti, 898
 status in United States, 3678
 why is the Negro black? 4889
Nehemiah, in Bible, 6389
Nejd, Arabian central State, 6265
Nekrasov, Nicholas, Russian poet of peasant life, 4817
Nekumonta, story and picture, 6563
Nelly Bly, picture, in colour, 403
Nelson, Viscount. Horatio, English admiral and hero, 1452
 last signal, 6349
Pictures of Nelson
 arrival at Yarmouth, 1452
 bidding goodbye to grandmother, 1446
 fighting at battle of St. Vincent, 1452
 flagship, Victory, 1450, 1590, 4861
 last entry in Victory's log book, 4864
 portrait, 4133
 receiving Spanish officers' swords, 1456
Nelson Column, account of, 4228
 picture, 1218
 size compared with tennis ball, 6971
Nemesta, flower, 6380
Nemesis, Greek goddess, 3532
Nemophila, flower, 6382
Neon gas, an element, 4222
Nepal, Indian State in the Himalayan foothills, 2946
 flag, in colour, 6974
 Patan, street scene, 2951
Nepalese hornbill, bird, 3255
Neptune, god of the sea, 3529
 sculpture by Ammanni, 4722
 temple at Sunium, 5510
Neptune, planet, description, 3356
 discovery of, 987, 3358
 distance from Earth, 2990
 facts about Neptune, 7061
 size, in solar system, 3118
 path of, 15
Neptunium, unstable, man-made element, 4221, 4813
Nereides, mythological nymphs, 3529
Nereid Monument, model in British Museum, 5500
Nereus, mythological god, 3529
Neri, Philip, founder of the Oratorio, 5880
Nerita, shells, 1179, 6581
Nernst lamp, incandescent electric lamp, 1098
Nero, Roman emperor, 2877, 4404
 Corinth Canal begun by him, 4876
 portrait, 2878
Nerva, Roman emperor, 2878
Nerve, account of, 1811, 2797
 cell: see Nerve cell
 cold, effect of on, 3282
 funnybone a mixed nerve, 1810, 2797
 inner ear nerve of hearing, 3302
 Muller's law, 5368
 touch-bodies and what they are, 1433
 what is pain and why does it hurt? 309
 nervous system in brain, diagram, 2799
 nervous system of body, diagram, 2801
 where they enter brain, diagram, 2933
Nerve cell, description of, 829, 2798
 brain's nerve cells, 1322, 6099
 grey matter of brain composed of, 2932
 muscles controlled by, 1198, 1810
 magnified, diagrams, 2797, 2935
Nervous system, what it is, 2798, 2800
 in worms, 929
Nestor, story in the Iliad, 5303
Nestors, New Zealand birds, 3498
Nethall, how to play, 5931
Netherlands: see Holland
Netherlands East Indies, description, 5532
 map of animals, plants, and industries, 5540-41
 See also Dutch East Indies and Holland
Néthou, Pic de, highest peak in Pyrenees, 5405
Netley Abbey, ruins near Southampton
 Water of a fine 13th-century Cistercian monastery, 963
Nettle, introduced into Britain by Romans, 1065
 members of family, 2564, 2566, 2568
 stinging: see Stinging nettle
 red dead, flower, in colour, 4286
 white dead, flower, in colour, 4287
 yellow dead, flower, in colour, 4906
Nettle-leaved bellflower, 4781, 4778
Neuchâtel, Swiss town, 4873
Neuchâtel, Lake of, 4868
Neuhof, Albert, The Lesson, painting by, 3654
Neurone: see Nerve cell
Nevada, American State, 7002
 railway track through gorge, 3808
 State flag, in colour, 6971
Nevers, French city, pottery named after, 8737
Nevis, presidency of the Leeward Islands, 3554
New Amsterdam, New York once known as, 2075, 3793, 5528
Newbiggin, Marion, author of Man and his Conquest of Nature, 1438
Newbolt, Sir Henry, English poet and author, 4081, 1289
 See also Poetry Index
New Brunswick, Canadian province, 2194
 arms, in colour, 4985
 calling the moose, 2201
 flag, in colour, 6967
 Grand Falls, 2204
 logs on St. John River, 5356
 St. John River bridges, 2204
New Carthage: see Cartagena
Newcastle-upon-Tyne, Northumberland, 343
 arms, in colour, 4991
 cathedral, 1836
New College, Oxford, arms, in colour, 4988
Newcomb, Simon, American astronomer, 2996
Newcomen, Thomas, English inventor, steam pump engine, 2746, 2836, 3210
 model of his engine, 2747
 principle of engine explained, 3209
New Delhi: see Delhi
New English Club, founded, 2668
New Forest, woodland district in Hampshire, 708, 1892
Newfoundland, description, 1020, 2326
 explored and mapped by Captain Cook, 2380
 Sir Humphrey Gilbert takes possession, 2075
 World Wars, part in, 2326
 arms, in colour, 4985
 flag, in colour, 6967
 Gilbert takes possession, 5213
 iceberg off coast, 2619
 logs ready for pulping, 1293
 St. John's, 2331
 scenes, 2331
 ships off the coast, 2617
Newfoundland dog, 670, 665
Newgate prison, Elizabeth Fry's work in, 3980
 whipping-post from 4864
Newgrange, Bronze Age relics, 316
New Guinea: see Papua
New Guinea, Dutch, map, in colour, 7097
New Hampshire, American State, flag, in colour, 6970
New Hebrides, Pacific Island group, 3427
 discovered by Quiros, 2378
 commissioner's flag, in colour, 6967
New Jersey, American State, flag, in colour, 6970
Newlands, John A. R., his scheme for arranging the elements, 4222
Newlyn, school of landscape painting formed at, 2546
Newman, Cardinal John Henry, English religious leader and writer, 1760, 3830
 portrait, 1757
 See also Poetry Index
New Mexico, American State, 7004
 desert before and after irrigation, 5977
 State flag, in colour, 6971
Newnham College, Cambridge, 6475
New Orleans, port of U.S.A., Negroes harvesting sugar-cane, 2289
Newquay, Cornwall, suspension bridge, 1714
News, modern machines for sending and receiving, 1470, 1474
 gathered from all parts of world, 2402
 how transmitted by telegraph, 1474
New Scotland Yard, London metropolitan police headquarters, 1217, 6607
New South Wales, oldest Australian State, 2569
Pictures of New South Wales
 arms, in colour, 4985
 artesian bore, 2577
 Boloco Gorge, Monoro, 2580
 cattle on banks of Club Lake, 2571
 Federal Parliament House, Canberra, 2573
 flag, in colour, 6967
 Guy Fawkes Falls, Armidale, 2580
 Hawkesbury River, 2571
 homestead, 2577
 officers choosing servants on taking possession of, 2082
 sugar-cane loading, 2447
 Sydney harbour and bridge, 553, 2579
 Sydney, surf-riding, 2580

New Spain, Mexico's early name, 7000
Newspaper, general account of, 2403
 on board ships, 855, 3576
 taxation of, 1517
 when did newspapers begin? 5487
 how news is received by telegraph, 1474
 picture-story, 2405-12
Newt, characteristics and habits, 4745
 in colour, facing 4469
 pictures of different varieties, 4745
New Testament : see Bible
Newton, Charles, archaeologist famous
 for Greek excavations, 6987
Newton, Sir Isaac, English scientist,
 3612, 5689, 6309
 colours of spectrum revealed by simple
 experiment, 5816
 electrical work of, 234, 5324
 gravitation law, 138, 494, 4713
 laws of motion explained, 4596, 6346
 light moving in straight lines, theory,
 4099

playing with electrified stick, 237
 portrait, 3611
 sees apple fall, 3615
 studying sunlight, 3615
Newton, John, clergyman friend of
 Cowper, 2104, 2101
Newtonian reflector, Newton's inven-
 tion for the telescope, 3612
New York, American State, flag, in
 colour, 6970
 Lake George, 3808
New York, commercial capital of
 America, 3795, 3877
 Chrysler Building, 4995
 Empire State building, 6608
 formerly New Amsterdam, 2075, 3793,
 5528
 its skyscrapers, 4995, 6606, 6608, 7060
 R.C.A. Building, 4995
 Woolworth Building, 6608

Pictures of New York

Bayonne Bridge, 554
 Bush Building, 3804
 Chrysler Building, 3675
 Empire State Building, 4995
 General Grant's tomb, 3688
 George Washington Bridge, 554
 Liberty statue, 3687
 Municipal Building and City Hall, 3804
 Shakespeare statue, 4477
 skyscrapers, 3673, 3675, 3804, 3805, 4995
 United States' Court house, 3805
 Uno General Assembly house, 6123
 Washington's entry into, 3797
 Woolworth Building, 3805
New Zealand, British dominion, 2693
 bees imported to fertilise clover, 6449
 British sovereignty proclaimed, 2076
 charted by Captain Cook, 2830
 coal production, 1384
 colonisation by Great Britain, 2076
 earthquakes, 442
 exports, 2074
 mandated territories, 2697
 Maoris, progress of, 2696, 2697
 railway tunnel at Otira, 6596
 resources, 6004, 6005
 wool export, 6005
 World Wars, part played by, 2697

Pictures of New Zealand

arms of the Dominion, in colour, 4985
 Auckland, views, 2693, 2704
 Avon River, Christchurch, 2704
 boiling mud pool at Rotorua, 2703
 Captain Cook's discovery, 2078
 cattle at a stream, 2692
 Christchurch Cathedral, 2704
 Dunedin, views, 2704
 farm scenes, 2692, 2705
 flags, in colour, 6965, 6967
 forest scenes, 2374, 5353
 Hochstetter ice-falls, 2246
 hydro-electric power station, Arapuni,
 2695
 Karangahape, 2703
 Kauri pine trees being felled, 5352
 Lake Ada, Otago, 2703
 lumbering, 2705
 Maori scenes, 2706
 mud volcano, 2132, 2702
 oxen team drawing timber, 5355
 phormium cultivation, scenes, 2563
 railway engines, 3510
 rocks off New Plymouth, 2703

Rotorua, general view, 2704
 sluicing for gold, 5857
 Southern Alps, scene, 2692
 Sutherland Falls, 2500
 Tasman glacier, 2249, 2703
 track through the bush, 2374
 tropical growth, 2374
 valley of hot springs, 2702
 Waiu River scene, 2498
 Waihi gold mines, Auckland, 2705
 Wairua Falls, 2702
 Wellington, scenes, 2697, 2704

Maps of New Zealand

animal life in the Dominion, 2701
 general and political, 2699
 in colour, 7108
 physical features, 2700
New Zealand flax : see Phormium
Ney, Marshal, French general, 1458
 Niagara Falls, on the border of Ontario
 and New York State, 106, 1348
 bridge across the falls, 548
 whirlpool below them, 6104
 woman wheeled across on rope, 3406
 Blondin crossing on tight-rope, 3407
 power houses, 5604
 views, 115, 2198, 2500
Nibelungen, German legend, 4222
Nibelungenlied, German poem, 4695
Nicaragua, republic of Central America,
 7003, 7008

flags, in colour, 6974
 Granada on Lake Nicaragua, 7014
 people, 7013
 map, general and political, 7030
 map, in colour, 7103
Niccola Pisano, Italian sculptor, 4521
Nice, French Riviera town, 4171
 France receives Nice from Italy, 4787
 promenade, 4053
Nicholas, St., of Bari, 6809
Nicholas I, tsar of Russia, 5896
Nicholas II, tsar of Russia, 5898
Nicholas Nickleby, novel by Charles
 Dickens, 2848
Nichols, Robert, English poet, 4083
Nicholson, Norman, British poet, 4084
Nicholson, Sir William, English painter,
 2677
Nicholson, William, English pioneer of
 electricity, 482
 invented cylinder printing press, 1518
Nickel, Canada's supply, 2324
 melting point, 7073
Nicobar Islands, coconut-producing
 islands in the Bay of Bengal, 2819
Nicobar pigeon, bird, 4123
Nicodemus, Jewish ruler, 4214
 Christ and Nicodemus, painting by La
 Farge, 3296

Nicol, J. Watson, Rob Roy and the
 Bailie, painting by, 2721
Nicolson, Harold, English author, 3828
Nicosia, capital of Cyprus, 3420, 3420
Niebuhr, Karsten, German archaeologist,
 Etruscan art first investigated by, 6994
 pioneer excavator in Mesopotamia, 6863
Niepcie, Nicéphore, French inventor,
 discovered photography with Daguerre,
 4749

Niepolomice, Polish memorial mound
 there, 5031

Nietzsche, Friedrich, German philo-
 sopher, 4699

Nieuport, Belgian port, 5648
Niewiadomski, Polish musician, 5029

Nigella, flower, 6258
Niger, African river, 6742

Lander brothers explore it, 3000
Niger Colony, French West African
 possession, 6749

Nigeria, British West African colony,
 3316

resources, 6005
 bridge at Makurdi, 555

flag, in colour, 6968
 map, in colour, 7098

native grain store, 3323
 northern village, 3324

princesses, 3319
 school in, 3317

Night, due to spinning of Earth, 16, 266
 polar night, 2742

why is it dark at night? 64
Flight of Night, painting by William
 Morris Hunt, 3293

Night Heron, bird, 3868
Nightingale, Florence, English hospital
 nurse in Crimean War, the Lady of the
 Lamp of Scutari, 1583, 3979

Pictures of Florence Nightingale

calling on Secretary for War, 3985
 nursing wounded at Scutari, 2351
 panels from London statue, 3985
 portrait, 3983
 receiving wounded at hospital, 3985
 statue in Derby, 3983
 tending the wounded, 3985
Nightingale, bird, 3026, 3019
 in colour, 2765
 Indian nightingale, 3017
 route of migration, 223
 is it true nightingales flourish where
 there are cowslips? 5252
Nightingale, The, story, 6073
Nightjar, species, 3260
 bird, in colour, 2767
 nest and eggs, 3257
Nightmare, causes of, 1045
Nightshade, of Potato family, 2436

See also under specific names as
 Deadly nightshade

Nijni-Novgorod, Russia : see Gorki
Nike, Greek goddess of Victory, 3520
 statue, 4032

Nile, African river, 6742
 canalised in 4000 B.C., 427, 6802
 influence on Egypt, 2250, 6873

mud left by flooding, 425
 source sought by James Bruce, 2998

temples on its banks, 5880
 worship of the Nile by ancient Egyptians,
 425, 2494

what is the sudd on the Nile? 5483
 camels ploughing on banks, 1531

Omdurman grain market, 3321
 Ripon Falls, 2500

trading boats on it, 2499
 map of delta, 2493

Nile, battle of the, Nelson's great naval
 victory over the French (1798), 1453

Nilgai, harnessed antelope, 1399, 1398
Nilometer, on the island of Roda near
 Cairo, 6881

Nimbus cloud, what it is, 2921, 2871
Nîmes, ancient cathedral city of France,
 4171, 5502

Roman temple, now called Maison
 Carrée, 5504, 5507

Pont du Gard, 5507
 Roman arena, 4179

Roman baths, 4180
Nimrod, the mighty hunter, 497

Nimrod, Shackleton's ship, 6554
Nimrud, excavation there, 6272

Nine, easy way to multiply by, 4591
 the magical nine, trick, 2114

Nine holes, game, 3596
Ninety-nine, how to multiply by, 4591

Nineveh, capital of Assyria, 2855
 excavations, 6870

grandeur of ancient city, 5377
 inscribed stone tablet, 2033, 6863

palace of a king, in colour, 320
 Sennacherib's palace, 5375

Ninnis, Lieutenant, Antarctic explorer
 with Mawson, 6554

Niobe and her Children, statues, 4272
 Greek sculpture, 4274

Nipkow, television experiments with
 scanning disc, 2344

Nippeword, what it is like, 5285
 flower, in colour, 5394

Nippon, native name for Japan, 6617
Nippur, old religious capital of Babylon,
 6273

Nirvana, Buddhist heaven, 2030
Nisnas monkey, 161

Nithsdale, Lady, how she saved her
 husband, story, 5952

Nitophyllum, seaweed, 3413, 3415
Nitrate of soda : see Saltpetre

Nitric acid, composition, 4348
 manufacture from the air, 856

Nitro celluloid, plastic used in making
 knife handles, 4010

Nitrogen, description of, 3332
 boiling point, 4998

element of atmosphere, 203, 687, 4222
 obtaining it from air, 856, 1228

soil fed with, 856, 1576
 use in electric lamps, 856

- Nitrogen peroxide, ozone at the sea proved to be, 1416
 Nitro-glycerine, explosive made from whale oil, 2149
 Noah, sons build city, 497
 story of his Ark, 376
 picture of the Ark, 374
 Nobel, Alfred, Swedish chemist, 5157
 Nobel Prize, Tagore receives, 5674
 won by Metchnikoff (1908), 2626
 what is it? 5882
 Noble, General, Italian Arctic explorer, his polar airship flight, 6444
 Noble, value of: see old English coins, 7070
 Noble Alcestis, story, 6937
 Noble agnolimus, beetle, in colour, 6336
 Noctiluca miliaris, marine protozoa, 6957
 Noctule bat, types, 290
 Nodding bur-marigold, 5890
 flower, in colour, 6128
 Nodding thistle, flower, 5761
 Noddy : see Tern
 Node, meaning of, 6428
 Noise, sound waves that cause, 6180
 can-a noise be heard when there is no air? 4893
 can we abolish it? 6102
 what makes a note sound out of tune? 6306
 why does a noise break a window? 4891
 why does a train make a noise in a tunnel? 6842
 why do loud noises make us deaf? 6468
 See also Sound
 Noisy frog, amphibian, 4743
 Nolckens, Joseph, English sculptor, 4767
 Nombre de Dios, Spanish port in Panama, 7002
 attacked by Drake, 5210
 Non-conductors, use in electricity, 234
 Nones, what they were, 4761
 None-so-pretty : see London Pride
 Nonsense from Serbia, story, 2632
 Noontide fly, insect, 6082
 Nordcaper whale, characteristics, 2148
 Nordenskold, Baron Nils Adolf Erik, Arctic explorer, 4606, 4597
 in the Arctic, 4606
 Nordenskold, Dr. Otto, Swedish Antarctic explorer, 6556
 Nord Fiord, Norwegian inlet, 5150
 Nordic Races, branch of the White race that inhabits northern Europe, 5145
 Norfolk, Duke of, coat-of-arms, 4987
 Norfolk, English eastern county, 212
 places in, 7165
 Pliocene deposits in, 1878
 road map, 7132
 Norfolk Broads, similarity to Dutch landscapes, 1426, 842
 Norge, airship used by Amundsen for Arctic flights, 6444
 Norinder, Swedish scientist, investigations on lightning discharges, 238
 Norman architecture, account of, 5865
 castle with its square keep, 6235
 churches built in England, 449
 English cathedrals, 5866
 St. Bartholomew, Smithfield, 5866
 Temple Church, 5868
 baptistery, Mellifont Abbey, Ireland, 3060
 examples, 719, 5867, 5875-82
 See also Romanesque architecture
 Norman Conquest, History of the, Freeman's history, 3095
 old French book in British Museum, 717
 Bayeux Tapestry story, 709-716
 See also William I
 Normand, Ernest, Esther denouncing Haman, painting by, 3225
 Normandy, one of the most important of the old French provinces, from which William the Conqueror invaded England, 4174
 D-day landings during Second World War, 1946
 Norman keeps still to be seen in, 717
 Northmen invade, 3918
 Northmen settle in and give name to, in reign of Alfred, 707
 Normans, development of England under, 3150
 Sicily conquered by, 4784
 Norman on the road of time, 721
 Normans building Bristol Keep, 3151
 Norrköping, town of Sweden, 5152
 Norsemen, or Northmen, 3027, 6919
 driven from England by Alfred, 891
 sagas, ancient stories, told by, 4937
 shipbuilding in England under, 3030
 See also Danes
 North, Frederick, Lord, English statesman, his American policy, 4126
 North America, map, in colour, 7100
 See also America, United States, Canada, and so on
 Northampton, capital of Northamptonshire, round Norman church at, 5868
 arms, in colour, 4991
 Sulgrave Manor, 1835
 Northamptonshire, English agricultural county, places in, 7167
 road map, 7129
 Northanger Abbey, Jane Austen's first novel (published after her death), 2350
 North Borneo : see Borneo, British North
 North British Railway, engine, in colour, 1044
 North Cape, Norway, 5151, 5156
 North Carolina, American State, explored by Raleigh, 2075
 State flag, in colour, 6970
 North Circular Road, London, viaduct across the River Lea, 2167
 Northcliffe, Alfred Harmsworth, Viscount, creator of modern newspaper methods, 4112
 portrait, 4102
 North Dakota, American State, flag, in colour, 6971
 North Downs, range of chalk hills in southern England, 467
 view near Reigate, 469
 North Eastern Railway, engine, in colour, 1044
 North Eastern Region, British Railways section, 3950
 railway restaurant car, 4196
 North-East Passage, Hudson's search for, 5212
 Nordenskiöld finds, 4606
 Northern brown butterfly : see Scotch argus butterfly
 Northern Ireland, Union of the six counties of Antrim, Down, Armagh, Londonderry, Tyrone, and Fermanagh, 3066
 population, 3068
 power station built during Second World War, 3067
 Governor-General's flag, in colour, 6966
 See also Ireland
 Northern Lighthouses, flags, in colour, 6966
 Northern Lights : see Aurora borealis
 Northern mythology : see Stories
 Northern Rhodesia, British territory in Central Africa, 3314
 See also Rhodesia
 North Magnetic Pole, what it is, 6842
 Northmen : see Norsemen and Vikings
 North Pole, what it would be like if we could stand there, 6846
 can men live and work at the North Pole? 2414
 as Peary left it, 6430
 ice field which Peary had to cross, 6430
 map of routes taken to the Pole, 6435
 See also Arctic and Pole
 Northrop, flying-wing aeroplane, 4689
 North Sea, branch of the Atlantic lying between Great Britain and the Continent, fisheries, 5106
 once dry land, 1880
 fishing trawlers at work, 5724-25
 North Sea Canal, Dutch waterway to Amsterdam, 5531
 North Sea Fisheries Guard, flag, in colour, 6966
 Northumberland, northernmost county of England, 215
 places in, 7167
 road map, 7142
 Northumbria, old kingdom of, 594, 596, 2776
 North-West Mounted Police : see Canadian Mounted Police
 North-West Passage, story of, 4605
 Amundsen finds (1906), 4606
 Larsen's double journey, 4607
 English adventurers discussing, 3877
 painting by Millais, 3534
 North-West Territories, Canada's Arctic regions, 2196
 Norton, Caroline : see Poetry Index
 Norton, Thomas, English writer, 857
 Norway, kingdom of northern Europe, 5150
 Birkeland-Eyde arc process in, 856
 Books of the Kings by Thorgilsson, 4938
 Canute rules, 596
 carbide manufacture in, 1228
 language and literature, 4940
 Pictures of Norway
 flags, in colour, 6974
 girl, 89
 midnight sun on Hardanger Fiord, 2743
 people, 5147
 railway engine, 3512
 saw-mills, 5601
 scenes, 5158-59
 Maps of Norway
 general and political, 5155
 in colour, 7086
 physical features, 5156
 showing historical events, 5157
 Norway lobster, 5477
 Norwegian gymnogrongus, seaweed, 3413
 Norwegian lemming, animal, 1033
 Norwegian saw-fly, in colour, 5714
 Norwich, capital of Norfolk, 213
 cathedral, Norman work in, 5866
 Norman keep at, 717
 school of landscape painters, 2306
 arms, in colour, 4991
 Cathedral, 1833, 5880
 gateway, 500 years old, 76
 Nose, work in warming and filtering air we breathe, 1818
 nerves from brain and their duties, 3903
 diagram, 3903
 Notochord, spinal column's gristly forerunner, 5345
 Notre Dame, cathedral of Paris, 5988
 iron doors wrought by Biscornette, 6740
 pictures, 3925, 4405
 Nottingham, capital of Nottinghamshire, 522
 Boot's factory, 6608
 knitting frames set up, 1214
 arms, in colour, 4991
 castle, 1835
 Nottingham Castle, Heroine of, story, 6808
 Nottinghamshire, English Midland county, 214
 places in, 7167
 road map, 7141
 Notus, mythological name for south wind, 3519
 Noughts and crosses, game, 255
 Noureddin and the Wonderful Persian, story, 5225
 Nova Aquilae, star, 3974
 Novalis, German writer, 4699
 Nova Lisboa, capital of Angola, 6753
 Nova Persei, star, 3974
 Nova Scotia, Canadian eastern maritime province, 2194
 Hudson explores, 5212
 origin of its name, 2318
 apple picking in, 2202
 arms, in colour, 4985
 flag, in colour, 6967
 Nova Zembla, Russian Arctic archipelago, Barents's winter in, 4601
 Novel, British, rise and growth, 2347
 great novelists of 19th century, 3579
 knowledge of life increased by, 110
 novelists of our century, 3711
 See also Literature
 Novelty, locomotive built by Ericsson to rival Stephenson's Rocket, 3738
 November, origin of name, 5341, 5340
 why are there so many meteors in November? 6730
 Novgorod, historic city of north-west Russia, 5893
 Swedes take, 5894
 Nowell, Arthur T., English painter, Expulsion from Eden by, 246
 Noyes, Alfred, English poet, 4082, 4077
 See also Poetry Index
 Noyon, French city, cathedral, architecture of, 5988
 cathedral, 6001, 6002

Noyon, French Maid of, story, 6931
NS 12, airship, 4446
Nu, ancient Egyptian god, 316
Nuar cattle, of Egyptian Sudan, 1155
Nucleus, of an atom, 4222
 cell nucleus: see Cell
 meaning and derivation of, 828
Nudaurelia cytheria, of S. Africa, moth, caterpillar, in colour, 6210
Nuffield, William Morris, Lord, motor-car manufacturer, 4111
 portrait, 4102
Nukualofa, Tonga Islands, Royal Palace, 3433

NUMBER

The following are actual headings of the chapters in the section of School Lessons

John and Jennifer Learn to Count, 131
The Names of Figures, 257
Games For Counting, 385
Remembering Figures, 510
Adding Together, 635
The Sums Get Harder, 757
Add, Multiply, Subtract, 878
All About 12, 1002
Pounds, Shillings, and Pence, 1125
Using the Scales, 1252
Taking Measurements, 1374
Measuring Wood, 1498
Games To Play, 1627
Making a Post Office, 1747
Cooking and Recipes, 1869
Notation Cards and Flash Cards, 1997
Lines and Shapes, Angles and Corners, 2119

More About Shapes and Sizes, 2241
A Card Race and Table Games, 2366
Number, general account of, 985
 atomic, meaning of, 4224
 finding a number, trick, 2114
 religion and the mystery of, 987
Numerianus, Roman Emperor, 2879
Nuneaton, market town of Warwickshire, Hartshill Castle, 1835
Nunney, Somerset, castle, 1950
Nuremberg, Bavarian city, 4428
 Albrecht Dürer's native town, 1188
 famous clock at the Frauenkirche, 5991
 tomb by Vischer in Church of St. Sebald, 4644, 6740
 wood carvings, 1193, 4643
 Dürer's home, 4434

Nürnberg: see Nuremberg
Nursery and Child Minders Regulation Act (1948), 6254
Nursery rhymes: see Poetry Index
Nut, life-story of, 2065
 autumn nutting party, 2981
 Barcelona exports, 5277
 conjuring tricks with nuts, 4951

See also under specific names:
 Hazel, Coconut, and so on

Nutcracker, bird, characteristics, 2769
Nuthatch, bird, characteristics, 3018
 in colour, 2899
Nutmeg, description of, 2804
Sumatra exports, 5532
 plant, in colour, 2686
 ready for gathering, 2802
Nux vomica, description, 2690
 plant, in colour, 2687

Nuyts, Pieter, Dutchman who explored South Australian coast in 1627: see page 2379

Nyala, horned antelope, 1399
Nyasa, Lake, Central Africa, 3002, 3314
Nyasaland, British Central African Protectorate, 3314
 arms, in colour, 4985
 map, in colour, 7099
 flag, in colour, 6968

Nyctemera, moth species which uses a cloak of bubbles, 6201
Nylon, textile, 4014
 plastics being used in manufacture of stockings, 4010

Nymphaeaceae, genera of, 6008, 6491

O

Oak, tree, general description, 3785
 different kinds of, 3785
 Druid's shrub of, 4889
 insect pests, 3786
 symbolical of freedom, 5350

why does a carpenter not use nails in fixing oak? 2918
 tree, leaves and flowers, 80, 3905
 Turkey, or moss-cupped, fruit, in colour, 3671

Oak-apple, what is it? 4763
Oakham, capital of Rutlandshire, arms, in colour, 4991

Oar-weed, giant seaweed, 457
Oasis, in deserts, 440, 441, 6261
Oast-house: see Hop kiln

Oates, Captain Lawrence, English Antarctic explorer and hero, 6558, 6559
 portrait, 6560
 walking into blizzard, 6553
Oat grass, 582
 yellow, 3308

Oath of Hippocrates, what is it? 6603
Oats, all about them, 1697
 food value of oatmeal, 2427
 origin and growth, 1435, 1697
 smut disease attacks, 1693
 cereal grown for food, 1696
 fine field in Canada, 1700
 harvesting in snow in Canada, 1697

See also plant life maps under countries

Oaxaca, Mexican province, 7005
Ob, Siberian river, flowing into the Arctic Ocean, 6014
Obadiah, prophet, meets Elijah, 2480
Oboron, fairy king in Shakespeare's *Midsummer Night's Dream*, 6294
Oberon, moon of Uranus, 3356
Oberzell, on Reichenau island, Lake Constance, Romanesque wall painting in St. George's Church, 450

Oblateness, what is meant by, 4883
Oblique-toothed gearing, 6350
Oblong woodsia, fern, in colour, 1797
Obrenovitch, Milan, first modern Serbian king, 4555
Obrenovitch, Milosh, Serbian patriot, 4555

Observation, man distinguished from other creatures by, 46
Observation game, 2118
Observatory, Tycho Brahe's, 3492
Obstacle race, game, 3108

Ocean, areas and depths of the oceans, 2125, 2495, 7059
 beds, how they may have been made, 140, 2248
 how does a sailor know his way in the middle of the ocean? 6842

See also Sea and specific names

Oceanides, mythological nymphs, 3529
Ocean Island, British territory in the Pacific, 3423
Oceanus, mythological god of the ocean, 3529

Ocelot, species of wild cat, 416
Octagon, how to find area: see Quickest way of finding things, 7075
October, origin of name, 5341, 5340
Octopus, sea creature, 5232
 phosphorescent light of, 4856
 three kinds, 229

Odde, Norwegian port, 5150
 nitrogen products made at, 1223
O Dear Sixpence, rhyme, music and picture, 3815
Odense, capital of Fünen Island, Denmark, 5149
 birthplace of Hans Andersen, 400
 loading butter on to a ship, 5165

Odericus, early Italian artist who laid mosaics in Westminster Abbey, 6732
Odessa, Russian Black Sea port, 5895, 6024
 Richelieu stairway, 6027
Odling, Dr., experiment with meteoric stone, 3608

Odo, Bishop of Bayeux, Bayeux Tapestry said to have been made for, 708
Odyssey, Homer's great poem, 5304
 story of the midnight Sun, 770
Oedipus and Sad Antigone, story, 6091
 fed by shepherd, sculpture, 4898

Oehlenschläger, Adam, romantic poet and writer, 4939, 4937
Oersted, Hans Christian, Danish electrician and chemist, electrical discoveries, 482, 1348, 5332
 place in Danish literature, 4939
 portrait, 5323

tries an electrical experiment, 483
Ogilvie, Will H.: see Poetry Index
Oglethorpe, James, English general and coloniser, 3792

O'Higgins, Bernardo, Chilean leader against Spain, 7004
Ohio, American State, Cleveland public square, 3803
 State flag, in colour, 6970

Ohm, George Simon, German electrician, 484, 610
Ohm, unit of electrical resistance, law of electric current, 610

See also units of electricity, 7071
Oil, animal and vegetable, 5127
 lined oil: see Lined
 obtained from opium poppy, 2890
 olive oil: see Olive oil
 whale's yield, 5860

Oil, mineral, story of, 2961, 3081
 aeroplanes used in search for, 2963
 British Isles, production at Eakring, 2968
 China's sources of, 8502
 distillation process, 2967
 elements which make up, 1551
 extraction from coal, 3451
 fire at oil well, story, 6194
 fixed oil explained, 5127
 founding of Shell and Anglo-Iranian oil companies, 4107

fuel in ships, 2967, 3574
 fuel, menace to gulls, 3996
 furnaces in Aquitania, 3707
Iraq pipeline's cost and annual delivery, 2966
 leather softened with oil and soap, 3158
 mosquitoes defeated by, at Panama, 4869

oil gusher, description, 2966
 Persia's production, 6391
 pioneers in search for, 2963
 Russia's sources, 6024
 tankers designed to carry, 2968
 Trinidad's production, 3556
 United States' production, 3676
 volatile oil, explained, 5127
 why it is used in motor-car engines, 4322

Wonder Questions

how does oil make a rough sea calm? 930
 what is the difference between fat and oil? 5127
 why does not oil mix with water? 189
 why does oil burn so easily? 1551
 why does oil float on water? 2686
 why does oil help the wheels to go round? 1049

Pictures of Oil

boring for oil in England, 3086
 derricks at Campina, Rumania, 5782
 derricks in Russia, 6029
 journey from earth to refinery, 2964-5
 oilfield at Bakū, 2961
 picture-story of industry, 3083-92
 prospecting by using gravity meter, 2967

See also Petrol and industrial maps under names of countries

Oil beetle, bees killed by larvae, 5840
 larvae carried by bees to hive, 6334
 in colour, 6336
Oil-bird, characteristics, food, 3266
Oil painting, introduced in Venice by Antonello da Messina, 932
 supposed to have been invented by the Van Eycks, 1052

Oil palm, description of plant, 2942
 grove in West Africa, 2941
Oil-tankers, 3092
Oise, tributary of the French Seine, scene painted by Daubigny, 3774
Oisín Returns from Fairyland, story, 5226

Okapi, mammal, description, story, and picture, 1401
Okaya, town, Japan, silk factories, 6623
O'Keeffe, Adelaide: see Poetry Index
Okhotsk, town, Siberia, 4602
Oklahoma, American State, flag, in colour, 6971

Old, why do we grow old? 3164
Old Age Pension, Liberal Government passes measure for, 4338
Old Clock on the Stairs, picture to poem, 2581
Oldenburg, republic of Germany, map, in colour, 7087

- Old English Measures, 7069
 Old Folks at Home, Negro slave song by Stephen Foster, 1268
 Oldham, Lancashire town, arms, in colour, 4991
 Old Hound, The, fable, 4116
 Old King Cole, rhyme, picture, 5546-47
 Old Maid, game, 5687
 Old Man of the Pit, story, picture, 409
 Old man's beard : see Traveller's joy
 Old Mortality, novel by Sir Walter Scott, published in 1816: see page 2722
 religious service of Covenanters, scene from, 2719
 Old Mother Goose, nursery rhyme, pictures in colour, 402, 1962-63
 Old Mother Hubbard, nursery rhyme, pictures, 103, 402
 Old Pretender, The, name for James Francis Edward Stuart, 1214
 Old Testament, events between New Testament and Old, 3345
 Hebrew, the original language of, 485
 translation into Greek, 6878
 translations of, 6858
 what it contains, 117
 words in, 81
 See also Bible, and so on
 Old Wives' Tale, novel by Arnold Bennett, 3713
 Old Woman tossed in basket, nursery rhyme, picture, 1096
 Oleander hawk moth, and caterpillar, in colour, facing 5935
 Oligocene Age, description of, 1756
 map of strata of Britain, 1754
 Oligoclase, sunstone, felspar, 1304
 Olive, production of, 5402
 grove in Portugal, 5401
 Italy's growth, 4910
 northern limit in France, 3927
 Olive beetle, pierced, in colour, 6336a
 Olive oil, countries which produce, 5402, 5766
 Oliver, character in Shakespeare's As You Like It, 6047
 Oliver, Isaac, English miniature painter, 2049
 Earl of Essex, portrait by, 1927
 Oliver, Peter, miniature painter, 2049
 miniature by, 2049
 Oliver Twist, novel by Dickens, 2848
 Olives, Mount of, Jesus and disciples go to, 4586, 3470
 Olivia, character in Shakespeare's Twelfth Night, 6049
 Olivine, mineral, 1303
 Olm, amphibian, characteristics, 4746
 picture, 4745
 Olsson, Julius, English marine painter, 2546
 Olympia, Greece, Doric School of Greek Art once centred at, 4028, 4138
 Temple of Zeus, 5497
 reconstruction, 5499
 statue of Jupiter, 4888
 Temple of Zeus, figures, 4023, 4029, 4031
 Olympians, chief gods of Greece, 3514
 Olympic Games, date of first, 4390
 influence on Greek art, 4138
 sculpture of runner in, 4899
 Olympus, Greek mountain range culminating in Mount Olympus, mythical home of the Greek gods, 5780
 Omaha, city of Nebraska, U.S.A., cattle waiting to be shipped, 3692
 Oman, coastal country of Arabia, 6265
 map, in colour, 7094
 Omar, Caliph, led the Arabs through East in name of Mohammed, 2281
 papyrus factories destroyed by, 6602
 Omar, Mosque of, at Jerusalem, 5632, 6278
 Omar Khayyam, Persian astronomer, mathematician, and poet, 5675
 Rubaiyat: see Poetry Index under Khayyam
 Omdurman, Sudanese native trading centre, facing Khartoum across the Nile, 3316
 grain market on banks of Nile, 3321
 Omelettes, how to make, with picture, 1864
 Omphalodes, flower, 6379
 Onager, wild ass, 1899
 Onatas, Greek sculptor, 4028
 One-horned sheep, 1280
 O'Neil, Henry, English painter, Raphael's Last Moments, by, 6189
 One, I love, rhyme picture, 608
 One misty, moisty morning, rhyme picture, 231
 One-sided filmy fern, in colour, 1799
 One, two, buckle my shoe, nursery rhyme picture, 972
 Onion, member of Lily family, 2442
 adaptation to dry climate, 1071
 milk spoiled by, 3178
 why does it make our eyes water? 4639
 crop ready to be gathered, 2440
 Only a Baby Small, picture to poem, 99
 Only One Thing To Do, story, 6566
 Onnes, Dr. Kamerlingh, Dutch physical scientist, experiments with liquid and solid air at Leyden, 5319
 attempts to reach absolute zero, 5320, 6314
 Ontario, province of Canada, 2195
 arms, in colour, 4985
 flag, in colour, 6967
 Lake of Bays, 2497
 Queenston-Chippawa generating station, 5604, 5605
 Trent Canal boat lift, 2200
 winter farm scene, 2202
 Onyx, form of chalcedony, mineral, 1301
 Oolite, meaning of word, 1505
 limestone with concretions, 2204
 map of strata in Britain, 1634
 See also Mesozoic Era
 Ooze, globigerina, 2495
 Opah, fish, in colour, 5097
 Opal, form of quartz, 768
 precious mineral, 1301
 Opelet anemone, in colour, 1553, 1554, 1556
 Opera, composers of, 144
 Operation, surgical, chloroform makes painless, 2508
 papyrus records of, 3500 B.C., 2502
 See also Surgery
 Ophelia, character in Shakespeare's Hamlet, 6183
 death of, 1106
 Ophelia and King and Queen of Denmark, 1104
 Opie, John, English painter, 2176
 F. Bartolozzi, portrait by, 2175
 Lady in White, painting by, 3657
 Opitz, Ferdinand, Austrian sculptor, 4896
 Opitz, Martin, early German poet writer, 4696
 Opium, Coleridge a slave to, 2474
 value as medicine, 2690
 Opium poppy, drug and oil obtained from, 2690
 in colour, 2687
 showing seed capsules, 2691
 Opole, or Oppeln, centre of Poland's iron industry, 5030
 Opoponax, fragrant gum, obtained from rough parsnip, 2938
 winged seed of plant, 947
 Oporto, Portuguese city, 5402
 general view, 5412
 River Douro at, 5414
 Opossum, animal, 2390
 various species, 2389, 2396
 water opossum, 2394
 Oppeln, Poland: see Opole
 Oppert, Jules, his work in deciphering cuneiform writing, 6869
 Optical illusion, 127, 627, 2117
 Optical lens, how it is made, 3888
 Optic nerve : see Eye, retina
 Optimism, a warrior word in human speech, 3459
 Opuntia, prickly pear, 1066, 3058, 3054
 Orache, seashore varieties, 5762
 flower, 5761
 halberd-leaved, flower, in colour, 5643
 Oran, town of Algeria, 6744
 Orange, Maurice, Napoleon looking toward England, painting by, 1451
 Orange, Maurice of, son and successor of William the Silent, 5528
 Orange, William of, called the Silent, founded the Dutch Republic, 5528
 Orange, William of, afterwards William III of England : see William III
 Orange, old cathedral city of Provence, France, 5504
 Roman arch, 76
 Orange, story of fruit, 1813
 northern limit in Spain, 5407
 seedless fruit production, 1202
 why do they not grow in England? 3284
 Pictures of Oranges
 as it grows, 1816
 being gathered in Jaffa, 1815
 curious ways of peeling, 754
 growing in California, 1815
 industry in Spain, 5271
 peel changed by Burbank, 1203
 See also plant life maps under names of countries
 Orange-breasted flower pecker, bird, in colour, 3141
 Orange cereacis anemone, in colour, 1555
 Orange-coloured saw-fly, insect, 5839
 in colour, 5714
 Orange-disked anemone, in colour, 1554
 Orange Free State, South African province, 3184, 3188
 arms, in colour, 4985
 Orange fruit pigeon, bird, in colour, 3263
 Orange-headed manakin, in colour, 3263
 Orange River, South Africa, bridge at Aliwal North, 3195
 Oranges and lemons, rhyme, music, and picture, 6528
 Orange-tip butterfly, head, under microscope, 1912
 with egg, caterpillar, and chrysalis, in colour, 6204
 Orang utan, characteristics, 160
 pictures, 161-2
 Oratorio, composers of oratorios, 141
 definition, 144, 5860
 Orbits, of planets, 7075
 of Earth, Venus, and Mercury, 3234
 of Venus, as seen from Earth, 3233
 Orcaeds, Orient liner being launched, 2658
 Orcagna, Andrea, Florentine painter, 573
 Orchardson, Sir William Quiller, Scottish painter, 2544
 his paintings: Her First Dance, 2555
 Napoleon on the Bellerophon, 1448
 Peveril of the Peak, 2720
 Orchestra, sound waves it makes, 6180
 Orchid, or orchis, classification of different species, 6496
 downland species, 5267
 grows without touching earth, 1070
 roots' use, 458
 seeds produced by it, 1065, 3888
 species found in woods, 4780
 what it is like, 4415
 bee orchis, flower, in colour, 5394
 dwarf orchis, flower, 5265
 fly-orchis, 5265
 greater butterfly-orchis, in colour, 5141
 green-winged orchis, flower, 4412
 purple orchis, flower, 4412
 spider-orchis, in colour, 5395
 sweet-scented orchis, in colour, 5393
 Order of Christ, Portuguese knightly order, 5398
 Ordinary, in Heraldry, series, 925
 Ordinance Survey, what is the Ordinance Survey? 4388
 Ordovician, layer of Silurian rock, 1011
 Orebro, Sweden, concrete bridge, 5161
 Oregon, American State, State flag in colour, 6971
 Bonneville Dam, 5602
 Memorial to Chief Blackhawk, 3688
 O'Reilly, John Boyle : see Poetry Index
 Orellana, Francisco de : see De Orellana
 Orfeo, Sir, story, 4361
 Organ, composers for the organ, 141
 how the pipes produce over-tones, 6428
 what makes the sound in it? 6232
 Organ bird, 3025
 Organic chemistry, Liebig founds, 5575
 Organisation, true meaning, 5885
 reward of organiser in industry, 5633
 Organotherapy, what is meant by, 3174
 Oriel College, Oxford, arms, in colour, 4988
 Origin of Species, The, Darwin's book, 1586, 5576
 Orinoco, Venezuelan river, 7006
 exploration by De Quesada, 7001
 Raleigh's expedition to Guiana, 7002

Oriole, bird, habits, 2894
 Australian species, 2893
 Baltimore oriole, in colour, 3142
Bullock's, in colour, 3261
 golden, in colour, 3021
Orion, constellation, 3854
 beautiful nebula, 3974
 origin of name, 3519
 pictures, 3851, 3975
Orion, mythological story, 3519
Orizaba, highest mountain in Mexico, 7005
Orizaba silk-moth of Mexico, caterpillar, in colour, 6210
Orkney Islands, group of islands off the Scottish north coast, 1014, 5618
 map, in colour, 7082
Orlando, character in Shakespeare's *As You Like It*, 6047
 given chain by Rosalind, 1103
Orlando Furioso, Ariosto's romance, 4583
Orlando Innamorato, Boiardo's romance, 4583
Orlaya, plant, hooked seeds, 946
Orleans, historic French city, 2262, 4171
 defended by Aëtius against Attila (451), 2156
Orleans, Princess Marie of, Joan of Arc, sculpture by her, 5009
Ormuzd, Zoroastrian good spirit, 5086
Ornithogalum, flower, 6383
O'Rourke, E. Brian, Australian architect, offices at Sydney, designed by, 6616
Orotava, Tenerife, fig tree, 1937
Orpen, Sir William, Irish portrait painter, 2668
 Homage to Manet, 2676
 Mrs. Gibbs, portrait by him, 2673
Orpheus, story of Orpheus and Eurydice (with picture), 6929
 painting on ceiling of catacomb of St. Calixtus, Rome, 446
 Orpheus and Eurydice, by Corot, 6929
 painting by J. M. Swan, 3527
 with Eurydice, sculpture, 4402
Orpheus, warbler bird, characteristics and habits, 3138
Orpiment, sulphide of arsenic, 1302
Orpine, what it is like, 4782
 flower, in colour, 4906
Orr, Sir John Boyd, and Uno, 6484, 6485
Orr-Ewing, Juliana, Horatia: see Poetry Index
Orris, root, description, 2689
 name in Bible, 2807
Orsino, Duke of Illyria, character in Shakespeare's *Twelfth Night*, 6049
Orthoclase, potash feldspar, 1303
Ortolan, bird, flocks caught and fattened for the table, 2904
Orvieto Cathedral, architecture of, 5994
 front, 6002
Oryx, antelope group of Africa, 1400
 white, species, 1403
Osaka, Japanese city, 6622
 Asahi building, 6629
Osburh, Queen of West Saxons, mother of Alfred the Great, 2905
Oscillation, electric, 2090
O'Shaughnessy, Arthur, British poet, 4079
 See also Poetry Index
Osier, use of, 3787
Osiris, god, worshipped by ancient Egyptians, 316, 426
 sculptured shrine, 3896
Oslo, old name, now revived, of Christiania, the capital of Norway, 5151
 University established, 4940
 Karl Johans Gade, 5159
Oslo Fjord, Norway, 5150
Osmium, melting point, 7073
Osmosis, what it is, with picture, 6343
Osmylus, golden, insect, in colour, 5713
Osprey, habits and food, 3626
 alighting on water, 3627
 in colour, 3022
Ossian, semi-historical bard, poetry of, by James Macpherson, 2101
Ostberg Ragnar, Swedish architect, 6612
 Stockholm Town Hall, designed by, 6616
Ostend, Belgian port, 5648
Osterling, Anders, Swedish poet, 4942
Ostermund, Swedish town, 5157

Ostrich, characteristics and home, 4367
 South Africa's export of feathers, 3187
 does an ostrich hide its head in the sand? 5983
 its speed when running, 6852
 farm in South Africa, 3191
 showing plumage, 2641
 Somali species, 4369
Ostrich-plumed aster, flower, 6383
Ostrovsky, Alexander N., Russian dramatist, 4819
O'Sullivan, Seumas: see Poetry Index
Oswald, St., Anglo-Saxon king of Northumbria, founder of Christianity in his kingdom, 2777
Othello, story of Shakespeare's tragedy, 1102, 6164
 watching sleeping Desdemona, 6167
Othman I, Turkish sultan, founder of the Ottoman Empire, 6132
Otho, Roman emperor, portrait, 2878
Ottawa, capital of Canada, Federal Parliament meets at, 2324
 Imperial Conference of 1932, 2322
 Parliament Buildings, 2195
Otter, home, habits, and food, 793, 790
Otters and the Jackal, story, 4738
Otto, Nicholas, his gas-engine, 4319
Otto, cycle applied to internal combustion engines, 4319
Ottomans, Turks so named after leader Othman I, 6132
Oudenarde, Town Hall, 5659
Ounce, or Snow leopard, habits, 419
 pictures, 422, 423
Oundle School, arms, in colour, 4989

OURSELVES

The following are actual headings of the chapters in this group; the subjects dealt with will be found in their proper places in the Index
 Life that Fills the Earth, 77
 The First Living Things, 199
 Why Life Left the Sea, 325
 Life Makes the Body, 451
 The Tiniest Living Things, 575
 Our Unseen Friends and Foes, 697
 The Very Seat of Life, 827
 The Red Cells of the Blood, 941
 The White Cells of the Blood, 1059
 The Heart and What it Does, 1195
 Life and the Lungs, 1317
 The Covering of Our Bodies, 1429
 How Our Bodies Are Built Up, 1565
 The Head and the Limbs, 1691
 The Muscles and their Masters, 1809
 The Mouth and the Teeth, 1929
 How to Eat, 2061
 Food and its Uses, 2181
 Nature's Wonderful Food, 2307
 The Bread by which we Live, 2427
 Meat as a Food, 2557
 Alcohol, the Enemy of Life, 2679
 The Forest of Nerves Within Us, 2797
 The Mystery of the Brain, 2931
 The Parts of the Brain, 3047
 Our Wonderful Glands, 3173
 The Marvel of Hearing, 3297
 Our Wonderful Canals, 3405
 The Voice-Box, 3539
 The Story of the Eye, 3661
 The Eye's Wonderful Curtain, 3781
 Smell and Taste, 3903
 The Real Master of the Body, 4033
 All Sorts of Minds, 4149
 The Emotions of the Mind, 4279
 How We Rule Ourselves, 4407
 Parliament and How It Works, 4535
 Why We Pay Rates and Taxes, 4657
 The Law—The Power Supreme, 4773
 Laws That We Should Know, 4901
 Wealth and What It Is, 5015
 How Wealth is Created, 5137
 Trade Between Nations, 5261
 Money and Why We Use It, 5389
 Value, Supply, and Demand, 5513
 The Distribution of Wealth, 5637
 Spending and Saving, 5755
 A Nation's Wealth, 5883
 Resources of the Commonwealth, 6003
 Co-operation, 6123
 What the State Does For Us, 6253
 Ourselves and the Nation, 6373
 The United Nations, 6477
Ousel, ring, bird, in colour, 2898

Ousel, water, characteristics, 3025
 feeding her young, 3019
Outlines, game, with picture, 255
Outram, Sir James, English general, called the Bayard of India, 2947
Ovary, what it is, 945
Oven, electric, baking bread, 2427, 2429
Oven-bird, nest, 3148
Oversewing, how to do it, with picture, 2359
Overshot water wheel, 6350
Over the hills and far away, rhyme music, and picture, 3078-79
Over-tones, or harmonics, in music 6308, 6425
Ovid, Roman poet of the Augustan Age, 5431; portraits, 1667, 5425
Oviedo, capital of Asturias, Spain, 5278
Oule, what it is, 332, 704, 945
Owen, Everard: see Poetry Index
Owen, Sir Richard, English anatomist and palaeontologist, 5575
 reconstructed giant sloth, 2272
 portrait, 5569
 with dinosaur skeleton, 5577
Owen, Wilfred, British poet, 4083
Owen's bottle-making machine, how it works, 3881-83
Owen's kangaroo, 2395
Owl, family of, 3502
 feeding habits of barn owl, 6354
 why does it come out by night? 314

Pictures of Owls

barn, in colour, 2768
 barn, young specimen, 2639
 brown, in colour, 2897
 little, in colour, 3023
 long-eared, in colour, 2900
 short-eared, in colour, 2898
 species from many lands, 3501
 tawny, in colour, 2897
Owl-parrot, or kakapo, habits, 3502
 picture, 3497
Ox, as beast of burden, 1152
 wild in woods near London, 3030

Pictures of Oxen

bantin or Javan ox, 1159
 drawing cart in India, 1153
 Indian cement mill worked by, 1153
 oxen hauling load in Spain, 5275
 primitive drawing of an ox, 192
 team of oxen drawing plough, 1153
 team of oxen hauling timber, 1153, 5355
Oxenham, John, pen-name of W. A. Dunkerley: see Poetry Index
Ox-eye chamomile, what it is like, 4542
 flower, in colour, 4666
Ox-eye daisy, what it is like, 4413
 where it grows, 4414
 flower, in colour, 4417
Ox-eyed astata, insect, in colour, 5714
Oxford, cathedral city of Oxfordshire, ancient printing press set up, 1517
 arms, in colour, 4991
 Christ Church Cathedral, choir, 5877
 Christ Church Cathedral, exterior, 5881
 general view of city, 1712
 old Clarendon Press building, 6474
 scene on River Thames, 2499
Oxfordshire, English agricultural county, places in, 7168
 road map, 7124
Oxford University, architecture of colleges, 6237
 Ashmolean Museum, 6212, 6863
 buildings designed by Nicholas Hawksmoor, 6469
 Grinling Gibbons's work in Trinity College, 6732
 Radcliffe Library, 6470

Pictures of Oxford University

All Souls College, quadrangle, 6248
 arms of colleges, in colour, 4988
 arms of university, in colour, 4988
 Corpus Christi College, quadrangle, 6247
 New Examination Schools, 6247
 Radcliffe Library, 6248, 6473
Oxide of calcium: see Lime
Oxide of iron: see Rust
 Oxides, what they are, 2542
Oxley, John, Australian explorer, 6064
Oxlip, where it is found, 4732
 flower, in colour, 4907
Ox-pecker, bird that eats parasites on cattle, 2894

Ox-tongue, bristly, in colour, 5393
Oxygen, a colourless gas, 3332
 as an element, 203
 atomic structure and weight, 4101, 4222
 boiling point, 4998
 effect on colour in fire, 4394
 element essential to protoplasm, 830
 fire cannot burn without it, 183
 heat in animal life gained from, 327
 manufactured by electricity, 856
 necessary for all living things, 200, 460, 943, 1322
 quantity in the world, 4345
 rocks absorb, 1050
 specific gravity, 4954
 work in human body, 1062
Oyster, its life-story, 6576, 6579
 backboneless, 451
 egg production, 37, 4858, 6579
 pearls formed, 4857, 5234, 6579
 oyster bed, 5731
 shell opened by starfish, 6697
 specimen of common oyster, 6577
 specimens of shells, 6580
Oyster-catcher, bird, 3374
 picture, in colour, 2900, 3875
Ozone, what is it? 1416

P

Pacheco, Francisco, Spanish painter, 6679
Pacific Cable Board, flag, in colour, 6966
Pacific Ocean, largest of the oceans.
 area and depth, 2413, 2495
 claimed for Spain, 1020
 Magellan's discovery of, 771
 map, in colour, 7106
Packing, how to pack cases, 1625
Paddy, Charles M., his paintings,
 Landing of Pilgrim Fathers, 3795
 Worsted, 3774
Paddle-wheels, compared with propellers, 3214
Paddy, what it is, 1702
Paderewski, Ignace, Polish pianist, first
 Premier of the Polish Republic, 5029
Padua, city of Venetia, Italy, church
 of St. Antonio, 5994
 frescoes by Giotto, 568, 573
 Mantegna's frescoes, 931
 bridges across the river, 4924
 church of St. Antonio, 6000
 church of Santa Giustina, 6736
 Gattamelata statue, 4531
Paduan art, 931
Paconius, Greek sculptor, 4028, 4031
Paestum, Italy, temple of Poseidon, 5499, 5506
Pagan Bible, what it is, 5734
Paganellus, fish, in colour, 5097
Paget, Sidney, English painter, his
 painting, Lancelot and Elaine, 6946
Pahang, Federation of Malaya, 3424
 a village scene, 3434
 flag, in colour, 6967
Pain, what is it? 309
Paine, James, English architect, 6471
Paint, earliest known, 196
 how to clean, 256
 what is the secret of luminous paint? 5488
Painted frog, amphibian, 4739
Painted lady butterfly, with egg, caterpillar, and chrysalis, in colour, 6203
Painted pufflet anemone, flower, in colour, 1554
Painters, lives of masters, 5691, 6673
Painting, with stencils and picture, 4707
 how motor bodies are painted, 3765
 See also Art (School Lessons)
Paisley, town in Renfrewshire, arms in colour, 4991
Pajou, Augustin, French sculptor, 4646
Pakistan, Dominion of, Karachi, the capital, 2810
 population, 6003
 Status obtained in 1947, 2948
 map at time of independence, 2811
 map, in colour, 7095
 See also India
Palaeoartologic wolf, 541
Palaeoartologic, Cuvier founds, 5573
Palaeozoic Era, 646
Palatinate, Germany, map, in colour, 7087
Pale, The, district in Ireland occupied by English, 3066

Pale bishop's-mitre, insect, in colour, 5714
Pale blue toadflax, what it is like, 5268
 flower, in colour, 5394
Pale clouded yellow butterfly, egg, caterpillar, and chrysalis, in colour, 6203
Palencia, walled cathedral city of Old Castile, Spain, 5278
Paleo Chori, site of Sparta, 5372
Paleotherium, description of, 1756
Palermo, capital of Sicily, 5994
 Campanile, 4924
 cathedral, 5723
 churches, 5749, 5753
 scene, 4915
Pales, goddess of shepherds, 3520
Palestine, history and description, 6268
 and Security Council of Uno, 6481
 archaeological discoveries, 6987, 6990
 Babylonian conquests, 545
 Crusades in, 720, 3268
 exploration in, 6987
 origin of name, 796
 under Roman Empire, 1665
 camel caravan crossing desert, 2371
 people and scenes, 3463-70, 6263, 6278-79

Maps of Palestine

general and political, 6400
 in colour, 7093
 showing historical events, 6280
Palestine Exploration Fund, made first
 satisfactory survey of Palestine, 6983
Palestrina, Giovanni da, Italian composer and musician, 141, 145
Pale tussock moth, and caterpillar, in colour, facing 5935
Palgrave, Francis Turner : for poem
 see Poetry Index
Palimpsest, what is it? 450, 6602
Palindromes, game, 870
Palisade saw-fly, 5839
Palissy, Bernard, French potter and
 enameller, 3856, 6737
 heating furnace with his furniture, 2853
 rebuking the King of France, 3857
Palladio, Andrea, Venetian architect, 272, 6114, 271
Pallas Athene : see Athene and Minerva
Palmedated newt, 4745 ; in colour, 4469
Palma Vecchio, Venetian painter, 934
 his paintings, 933, 939
Palmer, Herbert Edward, English poet
 and critic, 4084
Palmerston, Lord, English statesman, 2137
 making speech in Parliament, 2137
 portrait, 2133
Palm oil, where it is produced, 3317, 6749, 6752
Palm squirrel, insects eaten by, 1030
Palm tree, different kinds, 2940
 coconut, 1437, 2069
 date, 1935, 1938, 1939
 pandanus, 3059
Paludan-Müller, Frederik, Danish poet
 and writer of plays, 4939
Pamirs, mountain tablelands where
 India, Russia, and China meet, 6500, 6510
Pampas, grassy prairies of the Argentine Republic, 2127, 7017
Pan, god of shepherds, 3530
 sculpture by Frémiet, 4630
Panama, republic of Central America, 7008
 death rate low, 4870
 flag, in colour, 6974
 natives and native village, 7013
 map, general and political, 7030
 map, in colour, 7103
Panama Canal, connecting the Caribbean Sea and the Pacific, 4863
 construction held up by mosquitoes, 6084
 Theodore Roosevelt urges its construction, 3796
 how much stuff was dug out to make it? 2173, 6596
 construction told in pictures, 4871-4
 lock gates being opened, 2170
 ship being hauled through lock, 4882
 view from Hill of Balboa, 7013
Panama Canal Zone, Governor's flag, in colour, 6971
Pan-American Conference (1940), 7022

Panchatantra, Sanskrit book, 4391
Pancreas, its part in digestion, 2063
Panda, characteristics, 792, 789, 790
Pandora, demi-goddess, 3519
 what is Pandora's box? 4757
 sculpture by Harry Bates, 4769
Panegyric, what is it? 5371
Panehsi, Egyptian sculpture, 4899
Pangolin, mammal, 2276; pictures, 2271
Panicle, in botany, 6495
Pansy, or heartsease, 6260
 legend of the pansy, 4734
 member of violet family, 4544
 produced from wild heartsease, 6260
 pictures, 5517, 6383 ; in colour, 4661, 5642
Pantagruel, Rabelais's hero, 4454
Pantaloon, origin of, 5427
Panthéon, The, Paris, wall paintings, 2930
 pictures, 4167, 6363
Panthéon, The, Rome, temple, 5504
 pictures, 1782, 5501
Pantomime, origin of, 5427
Papacy, rise of, 4784
Papal bull, what it is, 7055
Papal State : see Pope
Papanin, I. D., Russian scientist, Arctic
 experiments on ice-floe, 6444
Paper, history and manufacture, 1291
 clever catch, trick, 2117
 early inventors, 1291, 1439, 3579
 how to make a paper box, 3845
 how to make paper flowers, 5813
 how to make party decorations, 6669
 Shakespeare first edition printed on
 Kentish paper, 1034
 what is paper made of? 5488
 why does heat make it curl? 3652
 mills of Children's Encyclopedia, 1291
 process of manufacture, 1293-98
Paper-knife, how to make in plastic, 6925
Paper-nautilus, mollusc, 6586, 6577, 6580
Papin, Denis, French engineer, 2746, 3210, 3733
 thinking of wonders of steam, 2749
Papua, or New Guinea, territory in
 East Indies, 2444, 2448
 flag, in colour, 6967
 Japanese invasion of, 1944
 native fire brigade, 3436
 saluting British and German flags, 2083
 village scene, 3435
 map, in colour, 7106
Papyrus, paper made from, 1291
 member of Sedge family, 3306
 used by Egyptians, 426, 2034, 6875
 what it is, 118, 684, 1439
 Egyptian pictures and writing on, 685
 plant growing in Egypt, 685
Para, city of Brazil, 7016
Parables, Bible, fig tree, 5189
 good Samaritan, 5188
 great supper, 5189
 hidden treasure, 5062
 labourers, 5063
 leaven, 5062
 merchantmen, 5062
 mustard seed, 5063
 net cast into the sea, 5063
 pharisee and publican, 5190
 prodigal son, 5187
 rich fool, 4214
 sower, 5188
 talents, 5061
 tares, 5064
 ten virgins, 5064
 the two debtors, 4212
 unjust judge, 5190
 unjust steward, 5064
 vineyard, 5190
 picture to poem, 2333
Parabola, how to find area, 7076
Paradise Lost, story of poem, 6655
 Milton's payment for, 4482
 Ithuriel and Zephon, 1357
Paradise Regained, by Milton, 1358
Paradise tanager, bird, in colour, 3264
Paradox fruit, what it is, 1204
Paraffin wax, candles made of, 1670
Paraguay, republic of South America, 7016
 status of Indians, 7002
 war with Bolivia in the Chaco, 7004
 flags, in colour, 6974
 Government Palace, 7013

Maps

animal life of the country, 7029
 general and political, 7023
 in colour, 7104
 physical features, 7025
 plant life, 7027
Paraguay tea: see *Yerba maté*
Parakeet, characteristics, 3500
 varieties, 3499; in colour, 3141, 3142, 3144
Parallel motion device, 6350
Parallelogram, how to find area: see
 Quickest way of finding things, 7075
Paramaribo, port of Dutch Guiana, 5532
Paramecium, a species of infusoria, 6956
Paraná, South American river, 7003
 view at Rosario, 7009
Paranthropus, discovery during search
 for missing link, 2539
Para rubber, what the tree is like, 2568
 picture of tree, 1169
Parasites, of mosquito, 2626
 protozoa that are, 6957-58
 different varieties, 1912, 1913
Parasitic anemone, in colour, 1553, 1556
Parasitic fly: see *Ichneumon fly*
Parasitic plants, how they live, 206
Parasol, painting by Goya, 1309
Parasol ant: see *Sauba ant*
Paratasia, four-spot, beetle, in colour, 6336A
Parataua, Dahomey, market place, 6743
Parathyroid gland, functions, 3174
Parcae, the Three Fates, 3520, 6937
Parcel, how to tie up a brown paper
 parcel, with picture, 875
Paré, Ambroise, French surgeon, 2504
 portrait, 2501
Parelle, Jeanne, her life of self-sacrifice, 4970
Parents, unselfishness of, 4280
 why are we like our parents? 4129
 of famous people, 4131-35
Pariahs, outcasts of Hinduism, 6854
Paris, in Greek legend, 4518, 5303
 sculpture, 4395
Paris, in Shakespeare's *Romeo and*
Juliet, 6162
Paris, capital and largest city of France, 4170, 4613
 abbey church of St. Denis, 5986
 Arc de Triomphe, 4648
 Horses of Marly, 4645
 Hôtel de Cluny, 4643, 6359
 Panthéon, 6371
 Pont Neuf, built by Henry IV, 1681
 Renaissance churches, 6370
 Sainte Chapelle, 5989
 tapestry weaving, 6738
 Tuileries Palace, 6360, 6370
 what is the *Elysée* in Paris? 6596

Pictures of Paris

Alexander III Bridge, 4166
 Arc de Triomphe, 4167
 Bastille, site of, 4168
 Boulevard Montmartre, 4167
 Champs Elysées, 4165
 Cluny Museum, 6368
 Eiffel Tower, 2099
 Hôtel de Ville, 4167
 Les Invalides, 4166, 6356
 Louis XII tomb, 4173
 Louvre, 4166, 6364
 Madeleine, 4168
 Napoleon's tomb, 1457, 4172
 Notre Dame Cathedral, 76, 3925, 5998
 Opera House, 4166
 Palais du Luxembourg, 6364, 6365
 Panthéon, 4167, 6363
 Pasteur's tomb, 4172
 Place de la Concorde, 4163
 Porte St. Martin, 6362
 St. Denis abbey church, 4173
 Ste. Chapelle, 5987, 6000
 Shakespeare statue, 4477
 Sorbonne, 6365
 Tomb of Death, by Bartholomé, 5136
 Valde-Grâce Church, 6365
 Vendôme Column, 4168
 Versailles gardens, 4166
 view of seven bridges, 4165
 See also names of buildings, as
 Louvre, Notre Dame
Parish council, what it is, 4411
Park, Mungo, Scottish explorer of the
 Niger, 2998, 3000, 2997

fleeing from Moors, 3005
Parker, Sir Gilbert, Canadian historical
 novelist, 4336
Parker, Harold, sculpture, *Ariadne*, 4771
Parker, Sybil C., Jesus, the Good
 Shepherd, painting, 3838
Parkman, Francis, American historian, 4338
Parliament, story of its work, 4535
 Charles I and Parliament, 526, 1208
 Commons and Lords disputes, 1706
 in reign of Anne, 1214
 king's speech, 4537
 meaning of the word, 6856
 Simon de Montfort's, 840
 why are names not used in parlia-
 ment? 5364
 why have foreign parliaments such
 strange names? 6856
 See also House of Commons,
 House of Lords, Houses of Parlia-
 ment, Member of Parliament
Parmentier, Antoine, showed Louis
 XVI potato plants, 2441
Parnassus, mountain sacred in ancient
 Greece, 3531
Paros, island, its marble used by
 Praxiteles, 4271
Parrot, bird family, 3497
 Gautier's story of the cat and the
 parrot, 779, 3746
 teaching a parrot to talk, 4220
 do parrots know what they say? 6604
 Meeting of Parrots, painting by H. S.
 Marks, 3503
 varieties of parrots, 3499
Parry, Sir William Edward, English
 Arctic explorer, 4604
 expedition (in 1819), 4605
 portrait, 4597
Parsees, people of India, 2072, 6390
Parsley, members of Parsley family,
 2436, 2442, 2808
 varieties, 4540; in colour, 4285, 4661-62
Parsley fern, in colour, 1800
Parsnip, of Parsley family, 2442
 food value, 1436
 narrow-leaved water, in colour, 6130
Parson bird, of New Zealand, 3017
Parsons, Sir Charles, English engineer,
 inventor of the steam turbine, 3214,
 3738, 4104
 portraits, 3733, 4104
Parthenon, Athens, 4143, 6725
 architectural merits, 5496
 finest building before the rise of Rome,
 3769
 Doric columns, 5508
 figures from frieze, 1037, 4137, 4139
 figures from panel, 4139
 general view, 3515, 5505
 painting by Frederic E. Church, 3291
Parthia, country of the Ancient East,
 map, in colour, 7093
Parthians, Persia conquered by, 6390
Partridge, characteristics, 4248
 speed of its flight, 6852
 different varieties, 4251
 in colour, 2766, 2768
 nest and eggs, 2635
Party, Dining Out, a game for, 5688
 how to run a quiz, 3471
 making party decorations, 6689
 novel ideas for, 3475
 special dishes for, with picture, 1623
Pascal, Blaise, French geometrician and
 writer, 4455
 his calculating machine, 6840
 law of equal pressure discovered, 5201
 variation of atmospheric pressure mea-
 sured, 5198, 4453
Pasiteles, Greek sculptor of the first
 century B.C., a native of southern
 Italy, 4404
Pasque flower, member of Buttercup
 family, 5288
 in colour, 5394
Passenger-pigeon, 4120, 4119
Passing the Plate, game, 508
Passover Feast, celebration of, 1668
Passus, Roman measure of length, 3284
Pasteur, Louis, French chemist and
 microscopist, 2623, 6202
 at work in his laboratory, 2625
 painting by Edelfeldt, 3404
 portrait, 4131; with his daughter, 2625
 tomb, 4172

Pasto, Colombia, Basilica of Jesus del
 Rio, 7007
Pastoral staff, of 12th century, 4859
Pat-a-Cake, nursery rhyme picture, 102
Patagonia, territory of South America,
 map, physical features, 7025
Patagonian cavy, animal, 1032
Patan, Nepal, street scene, 2951
Patching, how to patch, 2983
Patchwork, how to make use of cloth
 pieces, with pictures, 3971
Patchwork quilt, puzzle, with picture,
 5686, 5814
Patent, what is it? 6104
Pater, Walter, English author, famous
 as a stylist, 3827
Pathans, Indian race, 2072
Patience, what it is and its effect on our
 lives, 2601
 woman awaiting fisherman's return,
 painting by Walter Langley, R.I., 2601
Patience of Griselda, story from the
 Canterbury Tales, 5801
Patmore, Coventry, English poet, 4079
 See also Poetry Index
Patmos, island of the Aegean, Italy
 cedes it to Greece, 4909
 view, 3463
Patna, Indian commercial centre,
 Buddh-Gaya temple, 5634
Paton, John, Scottish missionary, 1142
 Paton among the savages, 1141
Patras, town and port of Greece, 5768
Patricians, class of people in ancient
 Rome, 6854
Patrick, St., Irish saint, 2785, 3064,
 6918, 6961
 baptising two women, 3065
 St. Patrick's Bell, shrine, 3063
 St. Patrick's Tooth, shrine, 3063
Patriot, The, story, 4366
Patriotism, heroism and self-sacrifice
 expressed by it, 3341
Patrickbourne, Kent, church doorway,
 719
Patroclus, story in the *Iliad*, 5304
Patron Saint of Shoemakers, story, 6809
Patterns: see Design
Patteson, John Coleridge, English
 missionary bishop, 1140, 1137
Pattison, Dorothy: see Dora, Sister
 Paul, St., life before conversion, 5679
 his conversion, 1906, 5807, 5925
 labours at Antioch, 6297, 6417
 journey to Rome, 6663
 meeting with Peter, 6053
 on charity, 4337
 trial in Rome, 6666
 work in spreading Christianity 6557,
 6663
 escaping from Damascus, 5927
 preaching, 5925, 6419, 6537
 with Holy Family, painting by Giovanni
 Bellini, 938
Paul I., Emperor of Russia, 4622, 5896
Paul, king of Greece, 5768
Paul and Virgine, by Bernardin de St.
 Pierre, 4456
Paulinus, St., Roman who helped St.
 Augustine in his mission to Britain,
 2776
Pausanias, Greek traveller and writer
 on art, 4137
 his histories lead to excavation of
 Mycenae, 6986
Pavement, tessellated, from London, 722
 why has every pavement a kerb? 4639
 mosaic pavement at St. Albans, 6991
Pavia, ancient city of Lombardy, Italy,
 5746, 6110
 Certosa of Pavia, 6109, 6117, 6120
Pawl, mechanical device, 6351
Pawnbroker's shop, what do the three
 balls over it mean? 5490
Pax Romana, meaning, 1406
Paxton, Sir Joseph, Crystal Palace built
 by him, 3056
Payer, Julius von, Austrian Arctic
 explorer, 6434
Paying-off Pennant, what it is, with
 picture, 5981
Paying the Piper, what it means, 5616
Payne, John Howard, American writer,
 author of *Home, Sweet Home*, 1268
 writing *Home, Sweet Home*, 1269
 See also Poetry Index

Paysandu, Uruguay, general view, 7015
Pea, as a food, 2431
 fertilises itself, 832
 members of pea family, 4415, 4782, 5019, 5288, 5890
 picture illustrating food value, 2181
 picture of pods, 2438
Peace, a talk about peace, 2477
 League of Nations, formed to keep world peace, 4748
 lesson of Crete, 795
 prosperity dependent on it, 5264, 6126
 work of the Security Council of Uno, 6479
 quadriga by Adrian Jones, 5129
 symbolical picture, 3833
Peach blossom moth, and caterpillar, in colour, facing 5935
Peacock, **Thomas Love** : see Poetry Index
Peacock, home and plumage, 4253
 how it came into the world, story, 4484
 picture, 2641 ; in colour, 3261
 Javan, 4251
Peacock butterfly, with egg, caterpillar, and chrysalis, in colour, 6206
Pea crab, 5477
Pea grit, magnesium limestone, 2006
Peak of Derbyshire, legend, 1524
Peanut, earth-nut, ground-nut, or monkey-nut, 2432, 2439
 growth in Africa, 6749
 how to make John Chinaman of peanuts, with picture, 1000
Pear, what the tree is like, 4039
 cutting trick with picture, 6302
 goat made from it, with picture, 2235
 flowers and leaves, 4157
 ruit, 1817 ; in colour, 3669
 prickly pear, 3054-5
Pearl, made by parasite in oyster, 4857, 5234
Pearl barley, food value loss, 1698
Pearl bordered fritillary, with egg, caterpillar, and chrysalis, in colour, 6204
Pearl Harbour, Hawaii, Jap attack on U.S. Fleet, 1944, 3799, 6509, 6621
Pearl hyacinth, 6383
Pearl Mosque, at Agra, 5627, 5084
Pearl River, view at Canton, 6505
Pearl-shaped scale moss, 3408
Pear midge, larva inside pear, 6087
Pears, **Andrew**, founder of soap firm, 4109
Pearson, **Weetman**, Lord Cowdray, a creator of industry, 4106
Pear-tree silk moth, of India, caterpillar, in colour, 6209
Peary, **Robert Edwin**, Admiral, American Arctic explorer, 3607, 6440
 crossing open channel in ice, 6437
 difficulties in Arctic, 6430
 with dog team, 6441
Peasant : see Agricultural labourer
Peasant at the Flood, story and picture, 6445
Peasants' War, rising in Germany in 1524 and 1525 : see 4293
Pease-pudding hot, nursery rhyme picture, 230
Peat, what is it ? 4892
 bed at Lough-aveema, Antrim, 2006
 unloading on Marken Island, 5529
Pebble, illusion under water, 1921
 cemented together by silica, 2004
Pebble prominent moth, and caterpillar, in colour, facing 5935
Peccary, American forest pig, 1659
 collared peccary, 1655
Pêche, **Alexandre Mathurin**, Fishergirl, sculpture by, 5130
Peck, weight in various foods, 7070
Pecker, bird family, 3253
 orange-breasted flower pecker, 3141
Pedersen, **Professor**, wireless telephone improvements made by, 3364
Pedlar of Swaffham, story, 413
Pedro I, king of Portugal, England's trade covenants with, 5398
Pedrolino, Italian pierrot, 5814
Peel, **J. H. B.**, British poet, 4084
Peel, **Sir Robert**, English statesman, 2136
 repealed Corn Laws, 1588, 2137
 greeting his granddaughters, 2135
 portrait, 4132
 speaking in Parliament, 1587

Peele, **George** : see Poetry Index
Peelers, old nickname of police, 2137
Peer Gynt, Grieg's music, 4940
Pegasus, winged horse, 3518, 6821
Pegu, Burma, monster guarding a pagoda, 2817
Peiping, or Peking, city of China, 5628, 6503, 6504, 6509
 meaning of names, 6501, 6503-04

Pictures of Peiping

figure of lion outside old palace, 6508
 fortified gate and archway, 6515
 porcelain tower, 6505
 streets and street scenes, 6505-7
 Temple of Heaven, 5083, 6498
 triple arch in temple, 5635
 umbrella pagoda, 5635
Pekinese-stitch, how to sew, with picture, 2610
Peking, China : see Peiping
Pekingese, breed of spaniel, 670, 668
Pekoe, variety of tea, 2314
Pelagius Pope, who he was, 6918
Pelagosaurus, fossil remains, 1383
Pelagic architecture, famous buildings that were forerunners of Greek architecture, 5380
Pelee, Mont, eruption, 2248, 2132
Pelias, King, killed by daughters, 6937
Pelican, characteristics, 3750
 different varieties, 3749
Pelican's foot, shell, 1177
Pellagra, disease caused by sand-fly, 6087
Peloponnesian War, effect on ancient Greek art, 4270
 Thucydides, its historian, 5184
Pelorus Jack, dolphin, 2152, 2151
Pelton water wheel, 6351
Peludo, hairy armadillo, 2274, 2275
Pelvis, what it is, 1694
Pembra, island of British East Africa, 3315
Pembroke College, Cambridge, arms, in colour, 4988
 view of building, 6238
Pembroke College, Oxford, arms, in colour, 4988
Pembrokeshire, county of South Wales, rocky coast, 2006
Pen, materials used in its making, 2033
 what is the hole in the pen nib for ? 1922
 why will a pen and ink write on paper better than on a slate ? 2921
 manufacture of fountain-pen, 2035-37
 steel pen making, 2038
Pena Castle, Portugal, 5403
Penang, island of northern Malaya, 3424, 6513
 Hindu Temple, 3419
Pencil, manufacture of a lead pencil, with pictures, 2039
 balancing it on a needle point, with picture, 128
 how to sharpen a pencil, 1625
 in use in 1565 : see page 2034
 lead in a pencil is graphite, 3648
 what makes a lead pencil write ? 3648
 why will a slate pencil write on slate but not on paper ? 2542
 how a lead pencil is made ; 2039-40
 mark under microscope, 1916
Penda, king of Mercia, killed in battle when over eighty (in 655), 2778
Pendant, Saxon pendants, 725
Pendulum, first made by Galileo, 3609
 how to make Foucault's pendulum, with picture, 6299
 working of clock's pendulum, 6831
Penelope, story in the Odyssey, 5304
Penguin, bird, species, 4002, 6552
 various types, 4001
Penicaud, **Jean**, painter of early Flemish enamels, 6738
Penicillin, drug discovered by Sir Alexander Fleming, 2628
 fungus origin, 1440, 3411
 radioactive sulphur used in making, 4814
 what is penicillin ? 4018
Peninnis Point, Scilly Isles, 2129
Peninsular War, campaign that led to Napoleon's downfall, 1458, 5400
Penmaenmawr, Carnarvonshire, 1462
Penn, **William**, English Quaker coloniser, 3792, 3791

Pennant, what is a paving-off pennant, with picture, 5981
Pennant's parakeet, bird, in colour, 3141
Pennine Chain, mountainous region of northern England, 462
Pennsylvania, American State, William Penn founds it, 3792
 great bridge at Rockville, 3803
 Pittsburgh, steel center, 3692
 State flag, in colour, 6970
Pennsylvania, University Museum, expedition to Ur, 6871
Penny, mysterious penny, trick, 5933
 problems with pennies, 4831, 4952
 simple tricks with one, 875
 suspended penny, trick, 5194
 who is Britannia on a penny ? 6106
Pennycress, flower, in colour, 4420
Penny Post, coming of, 5458
 Sir Rowland Hill introduced it in 1840 : see pages 1585, 4626
Pennyroyal, plant described, 5892
 flower, in colour, 6128
Pennyweight : see apothecary's weight, 7069
Pennywort, marsh, flower, 5891
Penryn, slate quarry, N. Wales, 5852
Penrose, **J. Doyle**, his paintings, Iduna, 2887
 Margaret of Anjou meets a Robber, 955
 Penryn, Cornwall, granite quarry, 5849
Penshurst, Kentish village near Tonbridge, 6236
 picture, 6251
Pensioner, of First World War, 4657
Pentad, what it is, 6721
Pentstemon, flower, 6382
Pen-y-Benglog, Wales, 1460
Pen-y-Darran, Trevithick's engine run on colliery tramlines there, 2752
Pen-y-Gareg, dam, 4506
Pen-y-Ghent, English mountain, view, 473
Penzance, town of Cornwall, 338
Pepin, king of the Franks, 2521, 4292
Pepler, **H. A. C.** : see Poetry Index
Pepper, cultivation method, 2803
 black and cayenne, plant, in colour, 2686
 plantation in British Malaya, 2803
 ripe berries, 2802
 stem section under microscope, 1910
Peppercorn rent, what is it ? 5616
Peppermint, where it grows, 2808
Peppermint oil, cause of smell, 2808
Pepper saxifrage, flower, in colour, 4418
Pepsin, aid to digestion, 2062
Pepitone, synthetic, 4348
Pepys, **Samuel**, English diarist, 1849
 sees Shelton's shorthand, 6544
Perak, Federation of Malaya, 3424
 flag, in colour, 6967
Peratorrhina beetle, in colour, 6336A
Perch, fish, protective colouring, 4976
 in colour, facing 5197
Percheron horse, team, 1901
Percival, **Sir**, his quest of the Holy Grail, 6943
Percival Proctor, aeroplane, in flight, 4577
Percy, **Thomas**, compiled Reliques of Ancient Poetry, 2101
 See also Poetry Index
Perdita, character in Shakespeare's play, A Winter's Tale, 6052
Pereda, **José Maria de**, Spanish writer, 5059
Peregrine falcon, characteristics, 3626
 pictures, 2767, 3633
Perennial, meaning of term, 3178, 4541, 6258
Perennial cornflower, 6380
Perennial phlox, flower, 6380
Perennial rye grass, 3806, 3307
Peréz, **Ramon**, Spanish writer, 5059
Perfection stock, flower, 6383
Perfume, coal-tar producers, 4472
Pergamum, school of sculpture, the final stage of Greek art, 4396, 4403
 Roman bridge, 5511
 Wounded Warrior, sculpture from, 4400
Perlander, one of the seven wise men of Greece, 6848
Pericles, Athenian statesman and orator, 3124
 famous bust in British Museum, 4269
 on patriotism, 3341

panegyric by Pericles, 5371
 Phidias incurs his displeasure, 4143
 portrait, 3119
Peridot, jewel, 1303
Perim, British island coaling station in the Strait of Bab-el-Mandeb, 3421
Periwinkle, relatives that produce rubber, 2568
 lesser, flower, in colour, 4906
 variegated, flower, 6384
Periwinkle, shellfish, 1177, 6577
Perkin, Sir William, aniline dye discovered by, 4472
Perks, Sidney, restores London Guildhall, 4230
Perlis, Federation of Malaya, 3424
 flag, in colour, 6967
Permanent Court of International Justice, of League of Nations, 6482
Permian Age, strata, 1260
 map of strata in Britain, 1258
 sandstone, 2006
Pernambuco, or Recife, Brazilian port, 7016
Perpetual motion, what does it mean? 5738
Perrault, Charles, French writer of fairy tales, 399
Perrault, Claude, designed eastern façade of the Louvre, 6370
Perry, Captain, Japanese trade opened by him, 6620
Perry, James, metal pens first made by him in 1820: see page 2034
Perseids, meteor shower, 3608
Persephone: see Proserpina
Persepolis, famous palace, 5377
 surveyed by Niebuhr, 6868
 palaces and balls, 5374
 picture of Darius from, 6805
Perse School, Cambridge, arms, in colour, 4989
Perseus, stories of Perseus, 4968, 5736
 rescuing Andromeda, sculpture, 5257
 with grey sisters, 4967
Persia, or Iran, ancient kingdom of western Asia, 6385
 and Security Council of Uno, 6480
 Chancellor paves the way for English trade, 4600
Pictures of Persia
 door in lacquer work, 71
 flags, in colour, 6974
 man on donkey, 894
 oil wells, scenes, 3082, 3088, 3089
 people and scenes, 6393-99
 tea-house, 6387

Maps of Persia
 general and political, 6400
 in colour, 7093
Persia, Ancient, history, 6387
 ancient Zoroastrian religion, 5085
 architectural wonders, 5377
 Babylon captured, 3102
 Egypt's revolts against Persian rule, 6877
 Herodotus on Persia, 5184
 India invaded, 1943
 invasion of Greece, 3122, 4027
 Saracenic architecture, 5621, 5624
 stories of Persia: see Stories
 map, in colour, 7093
Persian art, influence of Egyptian and Assyrian art, 3902
 art without perspective, 443
 pottery developed to fine art, 6737
Persian Gulf, pearl fisheries, 6266
 Portugal once controlled trade, 5400
Persian literature, 5675
Persicaria, members of family, 5520
 climbing, flower, in colour, 4664
 pink, flower, in colour, 4663
Personality, its evolution, 4086
Perspective, inverted, 443
 Why do two sides of a road meet in the distance? 5122
Perspiration: see Sweat gland
Perth, cathedral city and capital of Perthshire, arms, in colour, 4991
Perth, capital and commercial centre of Western Australia, views, 2578
Perthshire, Scottish county, woods by Loch Achray, 2131
Pertinax, Roman Emperor, 2879
Peru, republic of South America, 7001, 7020

Chinese influence on civilisation, 1014
 llamas domesticated, 1533
 maize worshipped as god, 1702
 flag in colour, 6974
 planting sugar-cane, 2289
 scenes, 7014-15

Maps of Peru
 animal life of the country, 7028
 general and political, 7023
 in colour, 7104
 physical features, 7024
 plant life, 7026
Perugia, city of central Italy, 825
 Etruscan relics found, 6994
 Raphael at Perugia, 6191
 San Bernardino church, 6117
 San Domenico, stained glass, 6734
Perugino, Pietro Vanucci, Italian painter, 825, 6190
 Adoration of Holy Child, 1663
 The Madonna, 3594
 Virgin and Child, 824
Peruvian bark, from cinchona, 2683
 plant, in colour, 2687
Peruvian cactus, 3054
Peruvian sheep, alpaca, 1532
Peruzzi, Baldassare, Tuscan architect, 6111
 work on St. Peter's, Rome, 6112
Pessimism, cowardice of, 3462
Pestalozzi, Johann, Swiss educationist and author, 4673, 4960
 portrait, 4955; with two pupils, 4961
Pétain, Marshal, French Government leader during Second World War, 4050
 collaboration with Germany in Second World War, 1945
Petal, what it is and does, 332, 831
 different forms of corollas, 6495
Peta Tiqvah, town in Palestine, 6269
Peter, King of Serbia, 4555
Peter I, The Great, Russian tsar, 5894
 Bering's Siberian expedition sent out by him, 4602
 Falconet's spirited statue, 4646
 Russian legends, 4815
 at Deptford dockyard, 5893
 looking into House of Lords, 5897
Peter II, king of Yugoslavia, 4556
Peter III, emperor of Russia, 5895
Peter, St., or Simon Peter, his life story, 6789
 called to follow Jesus, 3960
 denial of Jesus, 4702
 his meeting with St. Paul, 6053
 his vision, 6171
 loyalty to Jesus asserted, 4586
 name for followers of Christ, 6417
 runs to sepulchre, 4826
 summoned to Cornelius, 6172
Pictures of St. Peter
 denies the Lord, 4584
 portraits, 6173, 6787
 preaching, by Fra Angelico, 5557
Peter, Victor, Two Friends, sculpture by him, 5009
Peterborough, Ontario, largest hydraulic lift in world, 4880
Peterborough, railway and agricultural centre in Northamptonshire, 5866, 5872
 Thorpe Hall and its ancient architecture, 6242
 arms, in colour, 4991
 west front of cathedral, 5879
Peterhouse, Cambridge, 5243
 college arms, in colour, 4988
Peter Pan, play by Sir J. M. Barrie, 404
 introduction in Barrie's Little White Bird, 3712
 who was Peter Pan? 2663
 statue in Kensington Gardens, 2663
Peter the First Island, Antarctic, Bellingshausen discovers, 6550
Peter the Hermit, of Amiens, French crusader monk, 3267
 led to Rome by barefooted kings, 3269
Petition of Right (1628), declaration by Parliament of the rights of the people of England, 521, 525
Petra, wonderful rock city discovered by Burckhardt, 6988
 Acropolis hill, 6277
 rock temple of Ed-Deir, 6990

Petrarch, Francesco, Italian lyrical poet, 4583
 portrait, 4581
Petrel, species of, 4002
 pictures of types, 2766, 3999
 storm petrel, in colour, 2900
Petrie, Sir W. Flinders, archaeological discoveries in Palestine and Egypt, 6838, 6859, 6867, 6988
Petrograd: see Leningrad
Petrol, product of petroleum, uses, 2961, 2967
 control, in aeroplane's cockpit, 4692
 picture-story, 3083-92
Petrol engine, as applied to motor-cars and motor-cycles, 4319
 See also Oil, mineral
Petroleum, aeroplanes used in search for, 2963
 "Big Inch" pipeline across U.S., 2966
 Britain has small natural supply, 2961
 Chinese used centuries ago, 2963
 drilling operation in boring for, 2963
 founding of British oil companies, 4107
 how it got into the Earth, 2961
 Iraq pipeline's annual delivery, 2966
 oil from the Earth, 2961
 pioneers in search for, 2963
 plankton, a source of, 2962
 production of, 2074
 Red Indians used, 2963
 specific gravity, 4954
 United States' production, 3681
 useful products from, 2967
 wax used in making milk-cartons and matches, 2968
 world production, 2968
 See also picture-story of oil, 3083-92
Petrol pump, how it works, 5249
Petrous bone, which it is, 1692
Petruchio, character in Shakespeare's *Taming of the Shrew*, 6044
Pets, hedgehog as a pet, 3223
 how to care for a cat, 2433
 how to keep a pet squirrel, 6927
 how to keep pigeons, 6926
 keeping a goat as a pet, with picture, 1866
 keeping rabbits for pleasure, 4219
 looking after your dog, 2733
 watching ants at work, 3231
Petsamo, Russian regains province ceded to Finland, 5902
Pettie, John, Scottish historical painter, 2545
Pictures by Pettie
 Drumhead Court Martial, 2554
 The Puritan, 1209
 The Royalist, 1209
 The Vigil, 3505
Petty Sessions, work explained, 4776
Petworth, Sussex, street scene, 1590
Pevensey, Roman Anderida, Sussex village near Eastbourne where William the Conqueror landed, 708
 castle, 962
Peveril of the Peak, Scott's novel, illustration, 2720
Peyre, Raphael C., Children at Play, sculpture, 4893
 Flower and Butterfly, sculpture, 5013
Phaestus, Crete, ancient palace, 322
 palace stairs, 6990
 pottery vase from, 6985
Phaethon, classical demigod, 3518
Phaethon's chariot, what is it? 6598
Phagocyte: see Blood cells, white
Phalacrognathus, Muller's, beetle, in colour, 6336A
Phalanger, pouched animal, 2390
Phallana polymena of India, moth, caterpillar, in colour, 6210
Phalarope, bird, habits, 3876
 grey phalarope, 3875
 red-necked, in colour, 3022
Phaleron Bay, Piraeus, Greece, 5778
Phallusia, sea squirts, 5346
Phanerogram, meaning of word, 3409
Phanocus, Emperor, beetle, in colour, 6336A
Phantom Cats, The, story, 6951
Pharaoh, cruelty to Israelites, 1113
 dream interpreted by Joseph, 990
 invited Jacob to live in Egypt, 994
Pharisee, Jesus and the Pharisees, 1665, 4339

- Pharnaces**, prince of Pontus, 5494
Pharos, lighthouse built at Alexandria by Ptolemy, 6878, 4884, 4888
Pharsalus, Greek town where Caesar fought Pompey, scene, 5769
Phaya Takh Sin, king of Siam, 6513
Pheasant, family and its allies, 4247
 speed of flight, 6852
 Argus, and Eliot's, 4249
 Mongolian and silver, 4251
 types, in colour, 2767, 3263
 See also under specific names
Pheasant's eye, what it is like, 4543
 flower, in colour, 4664
Pheasant shells, 1179
Pheeda, star of the Plough, 3728
Pheidippides, his race from Marathon to Athens, 5088
Phenology, what it is, 6721
Phoen, heraldic charge, 926
Phidias, or **Phedias**, Athenian sculptor, 3124, 4142
 Elgin marbles carved by him, 3769
 why his art is greatest thing that Greece produced, 4269
 head of Athene, 4141
 Jupiter, huge statue, 4888
 portrait, 3119
Phigalia, frieze from ancient temple of Apollo, now in British Museum, 4144
 sculptured figures from frieze, 4146-47
Philadelphia, third city of United States, 3877
 Benjamin Franklin a printer there, 5326
 first American Congress held, 3794
 Delaware River Bridge, 554
 Independence Hall, 3689
 State House, 3688
Philaæ, Egypt, famous temple that is sometimes submerged, 5380
 Temple of Isis, 5383, 5384
Philately, study of postage stamps, 4421-23
Philemon, Baucis and Philemon, 5086
Philip II, King of Spain, Armada sent because England helped Holland, 1084, 3880, 5274
 Escorial built by his order, 6372
 marriage to Mary of England, 1082
 Netherlands oppressed by him, 5527
Philip II, of Macedon: see Philip of Macedon
Philip IV, Spanish king, 1310, 6674, 6679
 in hunting costume, by Velasquez, 1313
 portrait by Velasquez, 1315
 visits Velasquez, 6677
Philip Augustus, the French king who recovered Normandy from England, 3920
 in Shakespeare's King John, 6289
Philip of Burgundy, portrait, 3917
Philip of Macedon, king and general, father of Alexander the Great, 3126
 stories about him, 3370
 portrait, 3119; on coin, 5391
Philip, St., what is known of him, 6791
 portrait, 6787
Philippa, queen of England, story of the burghers of Calais, 954
 tomb in Westminster Abbey, 956
Philippe Pot, famous tomb in the Louvre, 4644
Philippine Islands, West Pacific Republic, 6514
 annexed by United States, 3796
 Japanese invasion of, 1944
 coconut harvest, scenes, 2069
 flag, in colour, 6971
 General Post Office at Manila, 6516
 Municipal Building at Arevalo, 6516
 rice bound up into small sheaves, 1700
 terraced rice fields, 1699
 map, in colour, 7097
Philippopolis, Bulgaria: see Plovdiv
Philippus, Colwyn: for poem see Poetry Index
Philistine, Cretans of the mainland, called Philistines by Israelites, 796
 Samson captured by them, 1488
 wars with Israelites, 1366, 1857, 1861
Phillip, Arthur, English sailor, 2381
Phillipotts, Eden, English novelist, 3712
Philobolus fungus, spores scattered by explosion, 946
Philologist, meaning of, 563
Philosopher, thinkers of old times, 4837
 Asiatic philosophers, 5077
 on space, 862
 Pythagoras invented the name, 1038
 Socrates, Aristotle, and Plato, 5819
Philosophy, Raphael's picture, 1038
Phlegethon, river of under-world, 6930
Phlogiston, false theory of matter, 6310
Phlox, perennial flower, 6380
Phnom-Penh, town of Indo-China, 6513
 Royal Palace at, 6516
Phobos, moon of Mars, 3237
Phocas Column, Rome, 5511
Phoebe, goddess of the Moon, 3516
Phoebe, moon of Saturn, 3354
Phoenicians, art dominated by Assyrian art, 3902
 Britain probably reached by, 770
 building material for the Temple at Jerusalem supplied, 770
 Cadiz founded by them, 5272
 sailed round Cape of Good Hope, 771
 bartering goods, 5389
 loading their boat, 773
 map of Phoenicia, in colour, 7093
Phoenix, what it was, 5617
Phoenix Islands, British territory in the Pacific, 3428
Phoenix Park, Dublin, 3068
Pholas shell, 6580
Phonograph, Edison invents it, 5948
 See also Gramophone
Phormium, what it is and its uses, 2564
 growing and harvesting, 2563
Phosphates, Australia produces, 2448
 Ocean Island exports, 3428
Phosphorescence, what it is, 4520
 sea lit by animalcules, 4856
 what is it? 4642
 animalcules under microscope, 1915
Phosphorus, or Lucifer, 3518
Phosphorus, element essential to protoplasm, 830, 4222
 match-making, and danger of using phosphorus, 1673, 1676
Photo-cell, or photo-electric cell, what it is and what it does, 2339
 compared with selenium cell, 6842
 pictures of various uses, 2343
 transmission of pictures, 1475
Photography, colour films in, 4754
 how to photograph without a camera, with pictures, 2857
 influence on portrait painting, 2668
 miniature painting superseded, 2419
 of magnetic storms, 362
 snapshots, how to take first ones, 5065
 what photographs are, 5250
 why do they photograph a man's finger-print? 6728
 bullet striking gelatine, 4752
 eagle alighting, 4753
 Earth's surface photographed by a rocket, 4753
 how camera works, 4751-52
 man in pole jump, 4753
 silver bromide crystals, 4749
 steel ball spinning in water, 4752
 See also Camera and Cinéma
Photo-synthesis, what it is, 460
Photo-telegraphy, how pictures are telegraphed, with diagram, 1475
Phrenology, what is phrenology and is it true? 2541
Phrygian, meaning of name, 6104
Phyllophora, membrane-leaved seaweed, 3414-15
Phyllopo, development in the Silurian Age, 888, 1009
Phylloxera, vine-attacking aphid, 1818, 5721
Phylosamia cynthia of China, moth, caterpillar, in colour, 6210
Physical Energy, Watt's bronze group in Kensington Gardens, 4772
Physical science, Aristotle laid its foundations, 1288, 2153
Physics, pioneers of the science, 6309
 meaning of word, 4593
Physiology, founded by Vesalius, 5560
 physiology tables, facts about man and the animals, 7068
Piano, story of making, 675
 difference between good and bad pianos, 6426
 over-tones produced by vibration of strings, 6426
 production of different notes, 3539
 when we sing a musical note to the piano, why does it answer? 1550
 picture-story of manufacture, 676-78
Piast, ancient Polish dynasty, 5025
Piatt, Sarah M. B.: for poem see Poetry Index
Pica, link between hares and rabbits and other rodents, 1036
Picard, Jean, French mathematician, helped Newton, 3613
 measured Earth's circumference, 6310
Picardy, France, 4174
Picariæ, order of birds, 3253
Picasso, Pablo, Spanish-born impressionist painter, 3046
 A Portrait Study, 3045
Piccadilly, London, porter's rest, 4861
Piccadilly Circus, Underground Railway station, 4375
 pictures, 4379, 4381
Pichichiago, pygmy armadillo, 2274
 picture, 2275
Pick-a-Back Ping Pong, game, 1622
Pickering, English craftsman, 3853
Pickering, Professor W. H., on the Unknown Planet, 3358; portrait, 3611
Picking plums, game, 5562
Pickthall, Marjorie, Canadian poet, 4205
Pickwick Papers, by Dickens, instant popularity, 2014, 2847
Picnic, botany game for a picnic, 6544
 meals to prepare for, with picture, 1993
Picts, Bede's story of their arrival in Britain, 769
 defeated in Hallelujah Battle, 2644
 invade England, 591
Picture, building up a picture from circles, with picture, 1745
 built up from squares, 250
 cave man's carved with flint knife, 194
 drawn with wrong perspective, 868
 earliest known pictures, 191
 name pictures and how to make them, 384
 sent by telegraph, 855, 1475, 1476
 why do some faces in pictures seem to follow us? 4021
 how made for newspapers, 2408
 how sent by telegraph, 1475
 made from lines, 381
 made from smudges, 384
 See also under subjects of Pictures
Pictured proverbs, game, 3846
Picture frame, how to make one, 3844
Picture puzzles, 1371, 1494, 1862, 1990, 2358, 2486, 3969, 4095, 4948, 5068, 5310, 6174, 6300
Picture-writing, Sumerian form, 6267
Piddock, mollusc which bores through stone and timber, 6582, 6585
Pied flycatcher, bird, in colour, 2898
Piedmont, district of Italy, 1442, 4910
Pied Piper of Hamelin, picture to poem, 6031
Pied wagtail, bird, in colour, 3024
Pierced olive beetle, in colour, 6336A
Pierrefonds, Chateau de, famous early French fortress near Compiègne, 6357
 chapel and Staircase of Honour, 6367
 north front, 6366
Pierrot, who is he? 5614
Piffard, Jeanne, French sculptor, 4648
Pig, characteristics of family, 1653
 United States' millions, 3680
 common British, 1655
 young pigs being fed, 1659
 See also Boar, Wild
Pigalle, Jean Baptiste, French sculptor, 4646
 Child with Cage, sculpture, 4650
Pig bristles, China's export of, 6502
Pigeon, family characteristics, 4119
 how to keep them, 6926
 speed of pigeons, 5864, 6852
 various types, 2768, 3141, 3262-3, 4118-9, 4123
Piggy Wiggy Wee, nursery rhyme picture, 6773
Pigment, what it is, 4514
Pigment-cell, lens formed by outer skin curving over, 3661
Pigtail, sailors used to wear, 2540
Pig-tailed monkey, 163
Pike, characteristics, 4978
 swimming speed, 6852
 in colour, facing 5197

- Pike Country Ballads**, by Hay, 4205
Pilate, Pontius, 4704, 4822
Pilchard, characteristics, 5102
 in colour, 5098
Pilcher, Percy, experiments with gliders, 22, 21
Pilgrim Fathers, men who founded the American Nation, 1206, 2110, 3792
 monument at Plymouth, U.S.A., 3688
 series of scenes, 3790, 3793, 3795
 signing Mayflower Covenant, 5543
Pilgrim's Progress, The, story of Bunyan's masterpiece, 6781
 most widely-read book next to the Bible, 1210
 secret of its power, 1478
 Old Bedford Prison, where it was written, 1477
Pilgrim's Way, what is it? 6105
Pillar-box, why does the slot of a pillar-box slant upward? 5000
 letters being collected, 4625
Pillars of Hercules, the Rock of Gibraltar was one, 3417
Pillory, Defoe pilloried, 1482, 1481
Pilon, Germain, French 16th-century sculptor, 4644
Pilot fish, accompanies sharks, 4857
Pilot flag, in colour, 6966
Pilot's cockpit, in aeroplane, 4692
Pilpay, fables of, 6933
Pilsudski, Joseph, Polish statesman, 5029
Piltown Man, primitive skull, 3047
Pimento: see Allspice
Pimpernel, blue, flower, in colour, 4663
 bog, flower, 5891
 scarlet, in colour, 4664
 yellow, in colour, 4906
Pimplet anemone, different kinds, in colour, 1553-56
Pin, how to drill a hole in a pin with a needle, with picture, 6300
 why does it get hot if rubbed? 309
 picture-story of its making, 6463
 point, under microscope, 1911
Pindar, Greek lyric poet, 5182
Pine, tree, different kinds and uses, 3789
 fertilisation peculiarity, 705
 pollen from, 832
 turpentine and resin obtained, 2937
 cones of Scots pine, in colour, 3671
 New Forest, 2132
 Scots, 2941, 3915, 5005
Pine, ground, flower, 5265
Pineal gland, remains of an eye at base of brain, 3175
Pineapple, growth and harvest, 1820
 plantation in Queensland, 1812
 seeds, 333
Pine bird's-nest, or fir-rape, 4782
Pine marten, animal, 792, 790
Pine weevil, insect, in colour, 6335
Pink-Pong, pick-a-back, game, 1622
Pink, plant family, 2806, 4782, 5760
 Deptford pink, in colour, 4286
 proliferous, in colour, 4417
Pink-crested bee eater, in colour, 3144
Pink-footed goose, 3752
Pins and Needles, cause of feeling, 5984
Pintail, bird, 3752; in colour, 3022
Pinturicchio, Bernardino, Italian painter, 825
 his picture, Catherine of Alexandria, 822
 portrait of Raphael, 824
Pin wheel, 6349, 6351
Pinzon, Vincent, Spanish navigator, 1020
Piombo, Sebastian del: see Del Piombo
Pipe-cleaners, how to make dolls from them, with picture, 4589
Pipe-fish, characteristics, 5104
 great, in colour, 5100
Pipe of peace, what is the Red Indian's pipe of peace? 5373
Piper, fish, in colour, 5100
Piping crow, Australian bird, 3025
Pipit, characteristics, 3018
 meadow, in colour, 2768
 rock, in colour, 3024
 tree, in colour, 3021
Piraeus, port of Athens, 5768
Phaleron Bay, 5778
 view showing harbour, 5779
Piranesi, Giambattista, Venetian engraver and architect, 1690
Pisa, one of the oldest cities of Italy, 3610, 4910, 5746
 Baptistery, 76
 cathedral, 5747, 6736
 general view, 4920
 Leaning Tower, 5747
 panel from pulpit by Pisano, 4526
Pisano, Andrea, Florentine sculptor and architect, 5992
 work on famous bronze doors of Florence Cathedral, 5993
Pisano, Giovanni, Italian sculptor and architect, sculptured pulpit at Pisa, 4526-8
 statue of him by Salvini, 5008
Pisano, Niccolò, Italian sculptor, 5994
Pissarro, Camille, French Impressionist painter, 3042
Pistachio nut, general description, 2063
 in colour, 2688
Piston, its mechanism, 3212
 speed in locomotive, 3943
 two stroke, invented by Watt, 2748
 in motor-cycle engine, 4327
 in railway engine, 3946
 valve parts, in railway engine, 3946
Pitcairn, British island in the Pacific, 3428
Pitchblende, Mme Curie separates radium from it, 6316
Pitcher plant, eats insects, 204, 205
 grows on trees, 1070
Pitch lake, what is the great pitch lake of Trinidad? 6730
Pithecanthropus erectus, missing link claim, 2539
 skull found in Java, 1877
Pitman, Sir Isaac, shorthand system universally used, 6344
Pitt, Frances, work on speed of birds, 6852
Pitt, William, Lord Chatham, English statesman, 1328, 2134
 portrait, 2133; with wife and son, 4131
Pitt, William, English statesman, great Minister of the Napoleonic wars, 2134
 England's prosperity under him, 1334
 Napoleon's opponent, 1444, 4258
 portrait, with parents, 4131
 portrait, 2133
 speaking in Commons, 1443
Pitta, or ant-thrush, 3148
 Gurney's pitta, in colour, 3143
Pittar, Ruth, English poet, 4084
Pitti Island, Indian Ocean, voracious crabs of, 5478
Pittsburgh, American steel manufacturing town, scene, 3692
Pituitary gland, controls blood pressure and growth, 3175
Pius VII, Pope, David's portrait of him, 1804, 3657
Pius IX, Pope, how he befriended a poor boy, 5488
Pizarro, Francisco, Spanish soldier and adventurer, 7000
 piece of his standard, 4862
Plague, in England formerly, 2920
 Great Plague under Charles II, 4227
 spread by fleas from rats, 1034, 6090
 See also Black Death
Plague plant, picture-story, 1573
Plagues of Egypt, 1116-17
Plaice, life-story, 5105
 in colour, 5097
Planck, Max, German scientist, 6317
 theory about light, 5690, 5815
 portrait, 6309
Plane, tree, description, 4042
 fruit, in colour, 3670
 leaves and flowers, 3548
Planet, formation and story, 3113
 facts about planets, 7061
 Kepler and planetary motion, 4713
 outer ones vast distances away, 3356
 unknown ones, 3233, 3358, 3604, 3725
 has each a law of gravitation? 929
 how can we tell how many days there are in another world's year? 684
Pictures of Planets
 distance from Sun, 17
 how formed from spiral nebula, 3113
 journey round Sun, 15
 size compared, 15, 3117, 3353
 speed, 3358
 with their moons, 15
 See also separate names of planets
Plankton, marine life source of petroleum, 2982
Plant: see Plant Life
Plant, sensitive: see Sensitive plant
Plantain, what it is, 1818
 water: see Greater plantain
 buck's-horn, flower, 5759
Plantain-eater, bird, 3380
 giant plantain-eater, 3377
Plantain-like punctaria, seaweed, 3416
Plant associations, what they are, 1010
Plant bug, insect, 5721
Plant-cutter, American bird, 3148
Planté, Gaston, electric cell inventor, 735, 1348
Plant-flea, insect family, 5721
PLANT LIFE
 The following are actual headings of the chapters in this group; the subjects dealt with will be found in their proper places in the index
 How Life Goes Round and Round, 81
 Plant's Struggle for Life, 203
 Birth, Life, and Death of a Flower, 329
 How Plants Work for their Living, 457
 How Plants Move and Feel, 579
 Plants and their Ancestors, 701
 Flowers and Fruits, 831
 Flower's Wonderful Seed-box, 945
 Plants in Their Homes, 1065
 How Plants Came to Be, 1291
 What Man Can Do with a Plant, 1325
 How Plants Serve Mankind, 1435
 Wonderful Story of Wheat, 1571
 Great Cereals, 1697
 Great Fruits, 1813
 Figs and Dates, 1935
 Natural History of a Nut, 2065
 Forage Plants, 2185
 Plants of the Breakfast Table, 2311
 Useful Vegetables, 2431
 Plants that Clothe Us, 2561
 Medicine Plants, 2683
 Spice Plants, 2803
 Plants that Help our Industries, 2937
 Queer Plants, 3051
 Weeds that Creep Over the Earth, 3177
 Great Grass Family, 3303
 Flowerless Plants, 3409
 Life of a Tree, 3541
 Wild Fruits of the Countryside, 3665
 Great Timber Trees, 3785
 Pictures of the Timber Trees, 3905
 Beauty Trees, 4037
 Pictures of the Beauty Trees, 4151
 Flowers of the Hedgerow, 4283
 Flowers of the Meadow, 4413
 Flowers of the Cornfield, 4541; in colour, 4661
 Flowers of the Woodland, 4779; in colour, 4905
 Flowers of the Heath, 5019; in colour, 5141
 Flowers of the Downland, 5265; in colour, 5393
 Flowers of the Mountain, 5517; in colour, 5641
 Flowers of the Seaside, 5759; in colour, 5643
 Flowers of the Bogland, 5887; in colour, 6127
 Flowers of the Stream, 6007
 Flowers of the Garden, 6257
 100 Flowers of the Garden, 6377
 Plant Families, 6489
 annual plants, 3179
 beauty in the plant world, 84
 carnivorous plants, 5887
 chlorophyll found in them, 81
 climatic conditions and growth, 2621
 cycle of life, 81, 701
 daily work, 457
 development by man, 1325
 families of plant world, 6489
 fertilisation, 705, 831, 832, 2044, 2048
 first living things, 199, 5206
 four great vegetations of world, 1435
 growth of plants, 2186
 growth without touching earth, 1070
 herbarium, what it is, 6345
 how animals differ from plants, 78, 82
 how to grow plants anywhere at any time, 3965
 industries helped by, 2937
 influence of light and heat on, 585
 insect co-operation with, 5710

leguminous plants, 2431, 4782
 movement capacity, 82
 new varieties production, 1201, 1202
 parasites and saprophytes, 206
 partnership with other plants and animals, 206
 perennial plants, 3178
 sea plants, 1066
 smallest British flowering plant, 1068
 stems as food, 2434
 strength and energy of plants, 84
 sunlight trapped, 333
 what are these plants? puzzles, 1371, 1494, 6544, 6668

Wonder Questions

can a plant grow under ice? 3280
 does a plant go to sleep? 1917
 how can they grow on a bare wall? 4891
 how does the seed make the plant's colours? 2921
 how many seeds come from one plant? 6228
 should we have plants in a sick room? 4781
 what is a herbarium? 6345
 where do plants get salts from? 4386
 why are plants grown in the dark white? 4514
 why are some always green? 4639
 why are some poisonous? 2918
 why are their names in Latin? 6354
 why does manure make a plant grow faster? 4764

Pictures of Plants

botanical terms, picture-dictionary, 6494-95
 fifty useful plants, in colour, 2685-88
 flowerless, five kinds, 3408
 in Heraldry, in colour, 928
 melting way through ice, 3281
 stages in growth, 203, 330, 437
 map of food plants of world, 221
 maps: see plant life maps under names of countries
 See also Flowers, Leaf, Root, Seed, and so on; and names of plants
Plasma, red blood cells in it, 943
Plasmodium malariae, parasite which causes malaria, 6958
Plassey, battle of, victory of Clive over the Nawab of Bengal in 1757: see 1328, 2946
Plaster, cowhair in the plaster of a house, 2526
 in house-building operations, 2533
Plastic, material used in manufacture of many products, story, 4009
 paper-knife, how to make in, 6925
 products, picture series, 4009-14
Plataea, battle of, 479 B.C., Greeks finally defeat Persians, 6389, 6804
Plate, potter uses mould to make, 302
 photographic: see Camera
 puzzle of the broken plate, with picture, 6794, 6924
 why does a wet plate get dry if we leave it alone? 314
Plate, River: see La Plata
Platinum, an element, 4222
 conductivity and melting point of the metal, 7073
 weight of a cubic foot, 7074
 metallic or native platinum, 1302
Plato, Greek philosopher and writer, 1287, 3126, 5822
 story of Er, told by him, 6693
 teachings of Plato, 4837
 Aristotle with Plato, fresco, 1287
 bronze head, 5823
 teaching in Athens, 1289, 5825
Plato, crater on Moon, 3481
Platypus, Australian animal, 2516
 placing obstacles in burrow, 2517
 swimming, 2456
Plautus, Titus, Roman comedy writer, 5426
Plays, acting at home, 5581
 Please to remember, nursery rhyme picture, 230
Plebeians, class of people in ancient Rome, 6854
Pleiades, in Greek mythology, daughters of Atlas, 3519
Pleiades, in astronomy, 3973, 3976
Pleistocene Age, what the Earth was like then, 1880

animal life and fossil remains, 1881
 map, British Isles, 1878
Plesianthropus, discovery during search for missing link, 2539
Plesiosaurus, extinct marine reptile, remains found at Lyme Regis, 1508
 Triassic Age types, 1383
 fossil remains, 1383
 Jurassic Age reptile, 1505
 species reconstructed, 1383
Pleven, city of Bulgaria, 5774
Plimsoll, Samuel, British politician, 6347
Plimsoll line, what it is, 6255, 6347
Pliny the Elder, Roman historian and writer on natural history, 5431, 5425
Pliny the Younger, Roman author, 5432
 panegyric by him, 5371
Pliocene Age, what the Earth was like then, 1877
 animal life and fossil remains, 1879
 map, British Isles, 1878
P.L.M., Paris-Lyons-Mediterranean railway, 4171
Ploesti, oil-centre of Rumania, 5771
Plomer, William Charles Franklyn, English poet and writer, 4084, 4206
Plotina, wife of Trajan, portrait, 2878
Plough, camel plough in Egypt, 1531
 drawn by oxen in England, 1153
 new and old methods, 1575
 snow plough, 5120
Plough, constellation: see Great Bear
Ploughman's spikenard, 5759, 5761
Plovdiv, town of Bulgaria, 5774
Plover, bird, haunts and habits of species, 3874
 routes of migration, 222-3
 species, in colour, 2766, 2898, 3023
 stilted and ringed plovers, 3875
Plum, developed from sloes, 4039
 kernel in stone the real fruit, 1813
 stoneless plum produced, 1202
 how does the stone get in? 310
 fine specimens, 1816
Plumbago: see Graphite
Plumb-line, does it always hang straight? 4642
Plume anemone, in colour, 1553
Plumed ground pigeon, bird, 4123
Plume thistle, member of Composite family, 4414
 creeping, flower, in colour, 4420
 dwarf, flower, in colour, 5395
 march, flower, in colour, 6127
 woolly-headed, flower, in colour, 5396
Plutarch, Greek historian, 3128
Plutarch's Lives, Shakespeare's Roman plays based on them, 1101
Pluto, mythological king of classical underworld, 3531, 6930
 Proserpine seized by him, 4362
Pluto, planet, 3358, 3604, 3725
 distance from Sun, 8118
 facts about Pluto, 7081
 relative position, 3113, 3117
Plutonium, element prepared from uranium, 4221, 4813
Plymouth, port and naval station in Devonshire, 388, 1084, 1206
 arms, in colour, 4991
 Barbican, 350
 Plymouth Hoe, 1713
Plymouth (U.S.A.), boulder on which Pilgrim Fathers first trod, 1206
 Pilgrim monument, 3688
Plywood, the use of plastics in its manufacture, 4014
Pneumatic drill, used for breaking up roads, 2162
Pneumatic gas switch, diagram, 1047
Pneumatic shovel, used in tunnel construction, 6224
Pneumatic signal junction, 4194
Po, Italian river, 2493, 4910
Poacher's Silence, The, story, 6940
Pocahontas, Red Indian princess, 3792, 5208
Pochard, wild duck, 3756, 3753
 in colour, 2900
Pocket-handkerchief, coin in the handkerchief, trick, 5438
 the wizard's handkerchief, trick, 753
 two catch tricks with, 1624
Podarces (Priam), son of Laomedon, 6692
Podded sea-oak, seaweed, 3415

Podontia, fourteen-spot, beetle, in colour, 6336A
Pod pepper, obtained from capsicum plant, 2804
Poe, Edgar Allan, American poet and writer of tales, 4203, 4332, 4331
 See also Poetry Index
Poems: see Poetry Index
Poet Laureate, Petrarch held title (in 1374), 4583
Poetry and Poets, what poetry is, 239
 America's contribution, 4202
 Australia's poets, 4205
 Austria's poets, 4699
 Canadian poets, 4205
 Danish poets, 4938
 French verse-makers, 4453
 Germany's poets, 4695
 Greek poetry the soul of Greek literature, 5179
 Indian poets, 4206
 Italy's great poets, 4581
 mind of a poet, 4150
 Norwegian poets, 4940
 poets of a dull period, 1639
 poets of recent years, 4077
 return to Nature in 18th century, 2101
 Russian poets, 4815
 South African poets, 4206
 Swedish poets, 4942
 wider range of popularity in 18th and 19th centuries, 3953
 symbolical painting by Raphael, 241
 See also Literature; names of Poets; and Poetry Index
Poet's narcissus, flower, 6378
Poincaré, Jules Henri, French scientist, investigated Moon's influence on tides, 3478
Pointed furcellaria, seaweed, 3413
Pointelin, Auguste E., French painter, a follower of Corot, 2792
Pointer, hound that detects victims by body scent, 670, 666
Pointillists, impressionism in modern French Art, 3042
Points, on railway, 4070
Poison, haemoglobin affected when a man takes it, 944
 virus, and what it is, 4017
 what is a poison? 1796
 what makes the poison in a snake's fang? 815
 why are some plants poisonous? 2918
 why does a wasp's poison not hurt the wasp? 2415
Poison gas, Germany's use of it, 1708
Poitiers, old capital of Poitou, France, architecture of cathedral, 5990
 Notre Dame la Grande, 5748
 St. Porchaire Church, 5749
Poitiers, battle of, 1356, defeat of French by the Black Prince, 954, 3920
Poker, why handle becomes hot if other end is held in fire, 5321
 why does water crackle when a red-hot poker is put in it? 6468
Poker-work, how to do, 5313
Pola, Roman amphitheatre, 5512
Poland, European republic, 5025
 art of Poland, 3397
 Austria takes Galicia from her, 4546
 Co-operative Union movement, 5031
 part in Second World War, 5029
 reconstruction after First World War, 1710
 Russia annexes part, 5895
 salt mines at Wieliczka described, 1540

Pictures of Poland

flags, in colour, 6974
 people, 5024
 scenes, 5025, 5034-38
 Wieliczka rock salt mine, 1543, 1544

Maps of Poland

frontiers after Second World War, 5029
 general and physical, 5033
 in colour, 7090
Polar bear, description, characteristics, and home, 786, 791
 seal's enemy, 911
 picture, 788
Polaris, ship's Arctic voyage, 6433
Polder, name given to Belgian coast pastures, 5648
 Holland's drained marshes, 5524

Poldhu, wireless station in Cornwall which transmitted first signals across Atlantic, 2092, 3363
Pole, in geography, cause of electrical displays, 238
Magnetic Poles, what they are, 360
North Magnetic Pole reached and charted, 4604
position of the Poles in summer and winter, 16
can men live and work at the North Pole? 2414
do people at the Poles spin round? 1416
how does a man know when he has reached the Pole? 6347
what is the world like there? 6846
 See also Arctic and Antarctica
Polecat, description, 793, 789
Pole star, 2992
its use to sailors, 6842
Police, courage of the police, 372
force raised by Peel, and hence called Peelers and Bobbies, 2136
Town council maintains them, 4408
patrol car with radio-telephony, 2219
Police court, Petty Sessions Court so-called, 4776
Polichinelle, the French Punch, 3037
Polish Robin Hood, The, story, 4369
Polistes, social wasp with nest, 5841
Politics, beginning of, 170, 1240
Polixenes, in *A Winter's Tale*, 6051
Pollock, fish, in colour, 5100
Pollan, of salmon family, 4982
in colour, facing 5197
Pollard, Sam, English missionary in China, 1144
Pollen, what it is, 332, 705
methods of pollination, 832
Pollock, James, Governor of Pennsylvania, 2174
Pollux, who was he? 5983
Polly, put the kettle on, rhyme, music, and picture, 605
Polo, Marco : see Marco Polo
Polonium, radio-active substance : Mme Curie names it, 6316
Polonius, character in Shakespeare's play, Hamlet, 1102, 6163, 6531
Polotsky, Simeon, writer of first Russian play and tutor to Tsar Feodor, 4815
Polyanthus, giant, flower, 6382
Polyclitus, ancient Greek sculptor, 4137
Amazons introduced into Greek Art by him, 4140
theatre built at Epidaurus, 5502
sculptures by Polyclitus, 4148
Polycrates, tyrant ruler of Samos, 1037
what was the ring of Polycrates? 1300
Polydorus, ancient Greek sculptor, 4396
Polygordius, segmented worm, 6827
Polyhymnia, mythological muse of the sublime hymn, 3517
Polyides, round, seaweed, 3416
Polynesia, Eastern groups of Pacific islands, including Hawaii, Samoa, the Tonga Islands, and Tahiti, 770
population, 3428
primitive art, 198
map, in colour, 7106
Polynices, son of Oedipus, king of Thebes, 6691
Polypetalae, meaning of word, 6491
Polyphemus, mythological giant, 3530
story in the Odyssey, 5304
Polyphylla beetle, in colour, 6335
Polypond, various species, 1798-99
Polyisiphon, sea anemone, under microscope, 1910, 1915
Polyxo, Queen, story, 4518
Polyzoon, fresh-water, plumes, under microscope, 1912
Pome, in botany, 6495
Pomegranate, what it is like, 1820
Pomerania, coastal area of Poland, 5031
Pomeranian dog, 669, 666
Pomeroy, Frederick William, his sculpture, Shepherd Piping, 4772
Pomona, Roman goddess, 3520
Pompador, chatterer, in colour, 3141
Pompeii, famous Roman city which was buried by an eruption of Vesuvius, and has since been uncovered, 324, 4404, 6995
A Find at Pompeii, sculpture by Moulin, 5011
Apollo statue found there, 5010

House of the Gladiators, 6991
House of the Vettii, courtyard, 5512
old street, 4923
remains of house, 6989
Street of Mercury, 6989
Temple of Jupiter, 4923, 5499
vase from Pompeii, 6990
wall pictures, 323
Pompey, surnamed the Great, Roman general, 1535, 2874
Pompon, François, French sculptor, 4648
Pompos Officer, The, story, 4853
Ponce de Leon, Juan, Spanish soldier and explorer, 1020
Ponce de Leon, Luis, Spanish poet, 5056
Pond, Arthur, English painter, his painting of Peg Woffington, 2421
Pondicherry, French Indian settlement, 2945 : general view, 2950
Pondicherry vulture, 3633
Pond mussel, shell, 1177
Pond-skater, insect, 5719
Pond snail, mollusc, 6585
Pond-weed, classification, 6497
leaves submerged in some cases, 1063
Pons Winnecke, comet, 3606
Pont du Gard, Roman aqueduct, near Nîmes, France, 4171, 5507
Pontefract, Yorkshire town, castle's architecture, 6235
Pontine Marshes, flooded area of Italy, 4913
Pontius Pilate : see Pilate
Pontoppidan, Henrik, Danish novelist, 4939
Pony, breeds, 1899
work of pit ponies, 2844
 See also Horse
Poodle, French, dog, 665
Pool, making a garden pool, with pictures, 5683
why does a pool stay on sand and not in a garden? 3392
Poole, Somersetshire tanner who helped Coleridge, 2472
Poole, Henry, British sculptor, 4896
Pool of Hezekiah, Jerusalem, view, 3466
Pool of London, by W. L. Wyllie, 5137
Poona, India, interior of the wireless station, 2091
Poor Folks, Dostoyevsky's story, 4819
Poor Law, abolition of, 6256
Poor Laws, Chadwick's report on, 5456
legislation in 19th century, 1582
Poor man's weather-glass : see Scarlet pimpernel
Poor Robin, rhyme, picture, 2959
Pop-corn, what it is, 1702
Pope, Court moved to Avignon, 1058
creation of office, 6916
decision as to ownership of new-found lands, 774
flag of Papal State, in colour, 6974
palace at Avignon, 6368
 See also names of Popes
Pope, fish : see Ruffie
Pope, Alexander, English poet and satirist, 1610, 1609
 See also Poetry Index
Pope, Sir William, English chemist, 4470
Pop-gun, why does it go pop? with picture, 5613
Popiel, Polish prince, 5028
Poplar, uses of wood, 3788
Lombardy, flowers and leaves, 4161
Popocatepetl, Mexican volcano, 7005, 7012
Poppaea, wife of Nero, portrait, 2878
Poppy, description, 4541
Californian, crimson variety, 6260
common red, flower, in colour, 4661
common red, fruit, in colour, 3670, 4661
opium, plant, in colour, 2687
opium, showing seed capsules, 2691
Shirley poppy, flower, 6383
stages in growth, 203
yellow-horned, flower, in colour, 5644
Population, climate's effect on it, 2617
its increase, 5863
of countries, 7060
of the world by continents, 7059
Porbeagle shark, 5228, 5231
Porcelain, history of industry, 6737
Chinese goddess, 75
Sèvres, examples, 6734-35
 See also China (ware)

Porcupine, species, 1036
Canadian tree porcupine, 1033
European crested, 1033
Indian bush-tail, 1032
northern limit in Spain, 5406
Pores, of skin : see Skin
Porlock, Somerset, view, 1714
Porphyra, common, seaweed, 3413
fringed, seaweed, 3415
Porpoise, mammal, characteristics, 2150
picture, 2151
Port Arthur, port of Manchuria, and Russo-Japanese War, 5898, 6504, 6511, 6620
and treaty between U.S.S.R. and China, 6512
Port Castries, St. Lucia, view, 3556
Portcullis, heraldic charge, 926
Porter, Endymion, Dobson's portrait in National Portrait Gallery, 1928, 1927
Porter, William Sydney, real name of O. Henry, American writer, 4335
Portia, character in Shakespeare's play, Merchant of Venice, 6041
Port Louis, capital of Mauritius, 3422
street scene, 3434
Port Macquarie, Australian harbour discovered, 6064
Porto Corsini, seaport of Ravenna, Italy, 4924
Port of London Authority, building, 4230
flag, in colour, 6966
Port of Spain, capital of Trinidad, 3556
cathedral, 3561
Treasury building, 3560
Porto Rico, West Indian island annexed by United States, 3796
map, general, 7030
map, in colour, 7103
smelting works, 2455
Portrush, Ireland, natural arch, 2007
Port Said, Egyptian port at north entrance of Suez Canal, 6873
street in, 6880
Portsmouth, chief British naval station, arms, in colour, 4991
Guildhall, 4409
Nelson's flagship, The Victory, 1590
scene in old port, 1594
Port Stanley, capital of Falkland Islands, 3558, 3562
Port Sudan, port for Anglo-Egyptian Sudan, quayside, 3323
Port Sunlight, Cheshire, its origin, 4109
Portugal, south-western maritime republic of Europe, 5397
colonies, 3183, 5402
former possessions in India, 2076, 2945
literature, 5059
Napoleon resisted by Portuguese, 4046
agriculture, 5401
flags, in colour, 6974
peasants, 5399
scenes, 5397, 5401, 5403, 5412-14
woman with her donkey, 1897, 1899
Maps of Portugal
animal life of the country, 5406
general and political, 5404
in colour, 7085
industrial life, 5408-9
physical features, 5405
plant life, 5407
showing historical events, 5410-11
Portuguese, the people of Portugal, early explorers, 772, 2877, 4125
Portuguese East Africa : see East Africa, Portuguese
Portuguese Guinea : see Guinea
Portuguese laurel, leaves resemble coffee, 2314
Portuguese West Africa : see Angola
Porus, Indian prince, who was defeated by Alexander the Great, 2944
Poseidon, classical god of the sea, 3529
statue from Boeotia, 4032
temple at Paestum, 5499, 5506
 See also Neptune
Posen, Poland : see Poznan
Positivism, system of philosophy of Auguste Comte, 4457
what is Positivism? 4889
Possession Islands, Antarctica, 6550
Postage stamp, first used, 1415, 4626
perforation invented by Mr. Archer (in 1851), 1415

- making a collection, and pictures, 6420-23
why can we not send a letter without a stamp on it? 3651
why has a postage stamp a perforated edge? 1415
- Postal Union**, foundation (in 1875), 4630
- Postman**, number in Great Britain, 4625
in various countries, 4636
letter being delivered, 4625
See also Post Office
- Postmaster-General**, King Darius the first on record, 4626
- Post Office**, its work, 4625
changes in Stuart times, 4626
miniature underground railway in London, 4376, 4628
reformed by Rowland Hill, 5459
stone pillar being made for G.P.O., London, 5855
- Pictures of Post Office Work**
Central Telegraph Office, 1471
flag, in colour, 6966
international radio telephone exchange, 2218
London General Post Office, 4625
picture-series, 4631-36
See also Letter; Postman; and so on
- Posture**, game, 3596
- Potash**, uses of, 4470
- Potassium**, an element, 4222
light-sensitive metal used in photo-cells, 2339
- Potassium cyanide**, how produced, 4348
- Potato**, food value, 2436
insect and fungus pests, 2441
Irish famine tragedy, 2436
member of same family as Tobacco plant, 2436, 2942
Raleigh introduces into Europe, 5207
sweet potato, 2442
why does it not rot under the earth when growing? 5618
why is it good to boil potatoes in their jackets? 2786
disease, picture-history, 2435
picture life-story, 2433
species, 2439
sweet plant, in colour, 2685
- Potato Woman and her pig**, how to make, with picture, 5563
- Potential**, meaning of term, 482
- Potential energy**, what it is, 86
- Pot-hole**, how it is made, 6103
- Potiphar**, Pharaoh's officer, master of Joseph in Egypt, 989
- Potosi**, city of Bolivia, 7020
- Pot pourri**, a sweet-smelling mixture of dried flowers, how to prepare, with pictures, 1744
- Potsdam Conference**, 3800
- Potter**, Beatrix, English author, 406
- Potter**, Humphrey, boy who is supposed to have invented automatic gear for steam engines, 3210
- Potter**, Paul, Dutch portrait and animal painter, 1426
Young Bull, painting, 3780
- Pottery**, development of industry, 6737
decoration in Bronze Age, 315
how it is made, 301
Japanese, 302, 6623
Limoges pottery, 4170
majolica ware, 6737
Palissy founds a new industry, 3856
Staffordshire a centre, and why, 2835
vases made by ancient Greeks, 324
Wedgwood and English industry, 3862
ancient Egyptian potter at work, 301
majolica plate, 6736
manufacture, picture-story, 303-306
workers in Spanish factory, 5273
See also China (ware)
- Poulsen**, Valdemar, Danish engineer, discoveries about the telephone, 1971
continuous wireless waves developed by, 2218
wireless arc developed by, 3364
portrait, 3359
- Poulsson**, Emilie; see Poetry Index
- Poultry**, domestic, descended from jungle fowl, 4252
United States' millions, 3680
pictures of jungle fowl in Tutankh-amen's tomb, 4252
varieties of fowls, 4253
- Pounce**, cuttle-fish bone powder, 5232
- Pound**, sterling, England's standard money, 5390
- Poundal**, definition of: see units of measurement, 7071
- Poussin**, Nicholas, French painter, 1682
Dance of the Seasons, painting, 2295
Shepherds of Arcadia, 1683
- Pouter pigeon**, 4118
- Powan**, salmon family, 4982
- Powell**, John, artist who designed stained glass windows, 6731
- POWER**
The following are actual headings of the chapters in this group; the subjects dealt with will be found in their proper places in the index
- The Very Heart of Matter, 105
What is Electricity? 233
The Ocean of Power We Live In, 359
The Electric Current, 481
The Story of the Dynamo, 609
The Storage Battery, 785
What Electricity Does for Us, 853
What a Magnet Can Do, 973
The Story of Electric Light, 1097
The Electric Furnace, 1227
The Marvels of Electricity, 1347
The Electric Telegraph, 1469
How the World Got the Telegraph, 1601
Talking to Anywhere, 1725
The Story of the Telephone, 1841
The Telephone Exchange, 1965
The Wireless Age, 2089
Radio Telephony, 2215
The Electric Eye and Television, 2339
The Wonder of Radar, 2461
The Wonderful Rays, 2585
The Electronic Age, 2713
Coal and What it Can Do, 2833
Oil and What it Can Do, 2961
Picture-story of Oil, 3083
Steam and What it Can Do, 3205
Gas and What it Can Do, 3331
Picture-story of Gas, 3447
Great Ships and What They Can Do, 3573
The Power Inside a Ship, 3703
A Great Ship and the Life Within Her, 3817
A Train and What It Does, 3943
Pictures of the Train, 4067
How a Big Railway is Run, 4191
The Motor-Car, 4319
The Airship, 4445
The Aeroplane, 4577
Pictures of the Aeroplane, 4687
The Future of Power, 4809
atomic energy, and its cost, 4811
electron the basis of power, 4101
heat produces it, 5441
jet propulsion, 4810
tidal, 2496
waves' force, 4296
how is it carried to a distance? 5124
See also Electricity; Steam; Water Power, and so on
- Powerful titulus beetle**, in colour, 6336A
- Power loom**, Cartwright the inventor, 172, 5942
- Poynter**, Sir Edward John, English historical painter, 2544
his paintings, Helena and Hermia, 981
Joseph brings Jacob to Pharaoh, 993
Slavery in Egypt, 543
Solomon on steps of throne, 2354
Vision of Endymion, 3521
- Poynting**, Dr. J. H., his methods for calculating density of the Earth, 5244
- Poznan**, town of Poland, 5031, 5032; 5036-37
- Pradier**, James, sculptor, 4647
his sculptures, Atalanta, 4651
Psyche, 4898; Sappho, 4900
- Praed**, William Mackworth: see Poetry Index
- Praetorian Guard**, personal bodyguard raised by Augustus, 2876
- Prague**, capital of Bohemia, 4552
early school of painters, 1185
industries and culture, 4554
pictures, 4564-65
- Prairie-chicken**, bird, in colour, 3141
- Prairie-dog**: see Marmot
- Prairie-wolf**, picture, 536
- Pratincole**, bird, characteristics, 3874
- Prawn**, sea crustacean, 5479
- Praxinoscope**, improved zoetrope, 6704
- Praxiteles**, Athenian sculptor, 4270
- Aphrodite of Cnidus**, 4271
- Cupid**, 4274
- Hermes and Satyr**, 4273
sculptures of his time, 4269
- Prayer**, its power, 1982, 3097
what is the prayer of the House of Commons? 4516
- Devotions**, by E. Maxence, 3096
For those at Sea, by Landeau, 3097
- Red Maids of Bristol**, by W. H. Y. Titcomb, 3096
- sculpture by Jean Dampt**, 4899
- Praying mantis**, insect, 5718
- Precious leaf-footed beetle**, in colour, 6336A
- Preece**, Sir William, Welsh electrical engineer, 2092, 3363, 3359
- Prefabrication**, what it is and how it helps building, 6608
prefabricated houses, building series, 2534-37
- Prehistoric animals**: see Geological Ages, Mammoth, and so on
- Prehnite**, mineral, in colour, 1303
- Prejevalski**, Nicholas, Russian Asiatic traveller, 778
- Pre-Raphaelite**, see English art, Pre-Raphaelite movement
- Presbyterian**, origin of term, 7058
- Prescott**, William, American historian 4336, 7000
- Preselector gear-box**, of motor-car, how it works, 4323
- Press**: see Newspaper
- Pressburg**, Czechoslovakia: see Bratislava
- Pressure**, electrical, 610
how to feel the pressure of the air, 251
of Sun's light on Earth, 3601
steam in locomotive, 3943
unit of explained: see units of measurement, 7071
- Prete à Mourir pour Son Ami**, story in French, 6682
- Pretender**, Old: see Old Pretender
- Pretender**, Young: see Young Pretender
- Pretoria**, administrative capital of the Union of South Africa, 3186
Church square, 3189
- Paul Kruger memorial**, 3194
- Union Buildings**, 3189
- Pretty Maid**, nursery rhyme picture, 102
- Priam**, king of Troy, 4998
in the Iliad, 5303
relics excavated by Schliemann, 6986
- Priapus**, Greek god of gardens, 3530
- Price**, definition, and conditions that affect it, 5513
- Prickly asperococcus**, seaweed, 3416
- Prickly cushion cactus**, 207
- Prickly pear**, or opuntia, 3058
invasion of Australia, 1066
pictures, 3054-5
- Prickly saltwort**, what it is like, 5782
flower, 5761
- Prickly-toothed buckler fern**, 1800
- Pride and Prejudice**, novel by Jane Austen, 2350
- Priest**, ancient Egypt ruled by priests 426
Ezekiel on the priest's mission, 913
- Priestley**, John Boynton, English novelist and writer of plays, 3714
- Priestley**, Joseph, English chemist and electrician, 856, 6310
- Priestman**, Bertram, English painter, 2677
- Cement Works**, painting, 2670
- Prieur**, Barthélémy, French 16th-century sculptor, 4644
- Primary colours**, what they are, 3784
- Primates**, apes, baboons, monkeys, lemurs, 159
- Primiticcio**, François, Italian painter, 6360
- Prime Minister**, duties, 1327, 4538
- Primrose**, what it is like, 4289
members of family found in woods, 4781
members of family in cornfields, 4543
stream members of family, 6010
flower, in colour, 4285
- Primus berry**, how it was produced, 1202
- Prince Charles spaniel**, 666

- Prince Edward Island**, Maritime Province of Canada, 2195
 arms, in colour, 4985
 flag, in colour, 6967
- Prince, F. T.**, British poet, 4084
- Prince Maximus**, story, 1887
- Prince of Wales**, badge and motto adopted by Black Prince, 952
 investiture regalia, 4863
- Prince's Gift**, story, 4854
- Princes in the Tower**, story, 960
- Princess Elizabethland**, Antarctic region, 6582
- Princess Who Became a Goose Girl**, story with picture, 1027
- Prince Who Became a Grasshopper**, fable, 6938
- Principe**, Portuguese African island, 5402, 6752
- Principia**, Sir Isaac Newton's book dealing with gravitation, 3612
- Pringle, Thomas**, Scottish poet, 4206
- Prinsep, Val**, English historical painter, 2544
 at the Golden Gate, 2550
 Women of Paris March to Versailles, 4045
- Printer's Bible**, what it is, 5734
- Printing**, story of inventors and machines, 1511
 Caxton, earliest English printer, 363
 China's ancient method, 6503
 invention kills art of illuminating manuscripts, 450, 1051
 newspaper machinery, 2404
- Pictures of Printing**
 Hoe machine and König's, 1515
 latest type, 2412
 newspaper picture-story, 2405-12
 page from first English book, 4859
 press, driven by electric dynamo, 611
 See also Caxton and Gutenberg
- Prionodura**, Newton's bower bird, 2774
- Prior, Matthew** : see Poetry Index
- Prism**, effect on light rays, 3850
 how to find area of surface, 7076
 Newton's work with prisms, 3612
- Prison**, Elizabeth Fry and John Howard reform conditions, 1582, 3980, 5450
- Privet**, relation of Ash tree, 3787
 fruit, in colour, 3665
- Privet hawk moth**, and caterpillar, in colour, facing 5953
- Probate, Divorce, and Admiralty Division**, work of, 4775
- Problems**, Little Problems for Odd Moments, 125, 252, 382, 502, 626, 750, 872, 998, 1124, 1248, 1370, 1494
- Proboscis bear** : see Coati
- Probus**, Roman Emperor, portrait, 2879
- Procter, Adelaide Anne**, English poet, author of *The Lost Chord*, 1286
 See also Poetry Index
- Procumbent marsh-wort**, 6012
 flower, in colour, 6130
- Procyon**, star, 3851
- Prodigal Son**, Christ's parable, 1854
- Prodigal Son** in far country, 5186
- Teniers's painting**, 1427
- Production**, its economics, 5515
 what it means, 5282
- Profit**, conditions that affect it, 5638
- Proliferous delcassaria**, seaweed, 3413
- Proliferous pink**, flower, in colour, 4417
- Prometheus**, classical demigod, 3518
- Prometheus Bound**, by Aeschylus, 5184
- Prometheus Unbound**, by Shelley, 2593
- Prongbuck**, antelope, 1400, 1401
- Propeller**, screw invention, 3214
 how fast does an airscrew move? 6346
- Propeller shaft**, of liner, 8704
- Prophet**, meaning to Israelites, 913
- Propylaea**, Athens, what it is, 6725, 5505
- Prose** : see Literature and names of writers
- Proseicsea**, ribboned. beetle, in colour, 6336A
- Proserpina**, or Persephone, in Greek mythology, 3516, 3532, 4362
 painting by Lord Leighton, 3522
- Prospero**, character, in Shakespeare's play, *The Tempest*, 6295
- Protein**, body-building food, 2183
 children's best sources of protein, 2559
 stomach digests it, 2063
- wheat and cereal, rich in it, 2423
- Protestant**, origin of term, 4293, 7055
- Protestantism**, introduced into Ireland as established religion, 3068
- persecution of French Protestants stopped by Cromwell, 523
- Romanism's conflict with it in 16th century, 4005
- Proteus**, mythological sea-god, 3529
- Proteus anguineus** : see Olin
- Prothero, Rowland** : see Ernle, Lord
- Protista**, what it is, 85, 6955, 6956
- Protohippus**, ancestor of horse, 1894
- Proton**, hydrogen nucleus, 4223, 4224
- Protoplasm**, living matter and its elements, 829
 breathing is intra-molecular, 1317
 energetic substance of life, 14
 memory a property of all 4035
 what it is, 6854
- Protozoa**, the simplest forms of Life, 37, 6955
 rapid reproduction, 4356
 with spines, through microscope, 6955
- Proud Frog**, fable, 3743
- Proud King of Kamera**, story, 534
- Proust, Marcel**, French writer, 4458
- Provence**, French province, 4171
- Julius Caesar Tower**, 76
- Roman arena, 4179
- Roman baths at Nîmes, 4180
- Proverb**, early Latin, 5425
- Proverb games**, 3348
- Proverb stories** : see Stories
- Providence**, its meaning, 1931
- Province Wellesley**, Federation of Malaya, 3423
- Provost**, who he is, 4410
- Proxima Centauri**, nearest star, 3726
- Prudence**, what it means, 1853
- figure in Rouen Cathedral, 4656
- Prudhon, Pierre Paul**, French painter, 1804
 Divine Justice, painting by, 1807
- Prussia**, State of Germany, 4299
- Austria crushed at Sadowa, 4298
- ruined by militarism, 4624
- defeats at Jena and Auerstadt by Napoleon, 1456
- map, in colour, 7087
 See also Germany
- Prussian blue**, a mixture of salts of iron, 1416
- Prussic acid**, effects of taking, 944
 how it is obtained, 4348
- Przevalski, Nicholas**, explorer in Central Asia, 1898
- Psalms**, of David, 2109, 2229
- By the Waters of Babylon, picture, 2231
- illuminated pages in colour, 492
- Psalms in Human Life**, book by Lord Ernle, 2109
- Psalter**, Saxon, pictures from, 1925
- Psaltery**, how played : parent of spinet and harpsichord, 675
- Psithyrus humble-bees**, 5843
- Psyche**, her marriage with Cupid, 5579
- Cupid and Psyche, by Canova, 4650
- Cupid and Psyche, by Thorwaldsen, 5258
 painting by Alfred de Curzon, 3523
- Psyche's Garden**, by Waterhouse, 3523
- sculpture by Pradier, 4898
- supported by Zephyrs, sculpture by J. Gibson, 5135
- Zephyr and Psyche**, by H. Bates, 5579
- Psychology**, science of the mind, 2105
- Plarmigan**, bird, plumage of, 4247
- bird, in colour, 3024
- Pterichthys**, in Devonian Age, 1133
- Pteridophyta**, or pteridophytes, meaning of word, and plants included in, 3412, 6490
- Pterodactyl**, prehistoric flying lizard, description, 648, 1508 ; picture, 1633
 discovery of, 2536
- Pteromyis**, flying squirrel, size of, 1034
- Pterygotus**, prehistoric creature, in Devonian Age, 1133
- lobster-like crustacean, 1009
- Ptolemy**, Egyptian astronomer and geographer, writer of many scientific books, 3488 ; portrait, 3487
- Ptolemy**, Egyptian dynasty, 6877, 6878
- Ptolemy I**, king of Egypt, 6877
- Ptolemy II**, king of Egypt, 4884, 6878
- Public Health Act**, its laws, 4408
- Public Schools**, arms, in colour, 4989
 See also names, as Eton College
- Puccini, Giacomo**, Italian operatic composer, 150 ; portrait, 145
- Puck**, in Shakespeare's *Midsummer Night's Dream*, 6294
- Pudding Lane**, near London Bridge, Great Fire began in, 4105
- Puddings**, how to make, with picture, 1217
- Pudding-stone**, pebbles cemented by silica, 2004
- Puebla**, city of Mexico, view, 7012
- Puffbird**, habits and food of, 3253
 in colour, 3144
- Puffin**, bird, characteristics, 4000
 in colour, 2768
 species, 2637, 3999
- Puffing Billy**, Hedley's locomotive, 2752, 3214, 2747
- Pufflet anemone**, in colour, 1554, 1555
- Pug dog**, mastiff breed, 670, 667
- Puget, Pierre**, French sculptor, 4845
- Pugin, A. C.**, artist who designed stained glass windows, 6731
- Pugin, Augustus Welby**, effect on nineteenth-century English architecture, 6655
- Pugnacity**, instinct which is still a driving force in men, 3537
- Pulcinella**, the original Punch, 3037
- Pulicaria** : see Fleabane
- Pulleys**, pictures of various kinds, 6349
- Pullman, George Mortimer**, American inventor of railway sleeping-cars, 2756
- Pullman car**, invention of, 2756
 interior of, 4197
- Pulp**, used in manufacture of paper, 1294
 in manufacture of rayon, 6096
- Pulpit**, one by Giovanni Pisano, 4528
- Pulse**, normal rate of, 6465
 where to feel, 1195
 why does the doctor feel it? 6465
- Puma**, American lion, 419, 424
- Pumice stone**, why it rubs out, 681
 where does it come from? 1046
- Pump**, how high water will rise in it, 5193
 steam, 3203
 working due to atmospheric pressure, 5201
 petrol pump, how it works, 5249
 suction, how it raises water, 923
 wind-driven petrol pump, position on aeroplane, 4692
- Pumping engine**, long life of Newcomen's engines, 2746
- Pumpkin**, member of Gourd family, 2432
 picture, 2439
- Punch**, who is Punch? 3037
- Punch and Judy**, story, 283
- Punctaria**, broad-leaf, seaweed, 3413
- plantain-like, seaweed, 3416
- Punctuation**, fun with stops and commas, 2732
- Punic Wars**, three wars between the Carthaginians and the Romans, Cato's history of, 5123
- Punishment**, ancient Babylonian Code of Laws quoted, 423
 salt deprivation, a punishment in Holland and Sweden, 1540
- Punjab**, Indian northern province, 2944
 known as the Land of the Five Rivers, 2310
- Punta Arenas**, Chilean port, 7019
- Papianus**, Roman emperor, 2879
- Pupil** : see Eye
- Purbeck marble**, used by early English sculptors, 4768
- Purcell, Henry**, English composer, 142, 145
- Puri**, India, Brahmin temple, 5627
- Puritans**, their intolerance, 4098
 persecuted in reign of James I, 1208
 setback given to art by, 1921
 unpopularity towards end of Commonwealth, 1210
 painting by John Pettie, 1209
 pleading with James I, 1212, 4663
- Purple cow-wheat**, in colour, 4663
- Purple emperor butterfly**, egg, caterpillar, and chrysalis, in colour, 6207
- Purple gromwell**, description, 4781
 flower, in colour, 4908
- Purple hairstreak butterfly**, egg, caterpillar, and chrysalis, in colour, 6207

Purple loosestrife, description, 6010
 flower, in colour, 6130
Purple molinia, grass, 3310
Purple mountain saxifrage, 5519
Purple orchis, flower, 4412
Purple sea rocket, 5763
 flower, in colour, 5643
Purse, how to make in leather, 6924
 trick, with diagram, 1250
Purslane, sea flower, in colour, 5643
Pushkin, Alexander, Russian poet, 4817
 portrait, 4815
Puss in Boots, story, 1145
 pictures, 402, 1145
Puss in the corner, game, 4468
Pussy-cat High, rhyme picture, 5051
Pussy-cat, where have you been, rhyme,
 music, and picture, 4569
Putheas, Greek navigator, 5157
Putting on the donkey's tail, game, 1746
Putumayo River, South America, atrocities
 against Indians, 7003
Puviz de Chavannes, Pierre, French
 decorative painter, 2930

— Pictures by Puviz de Chavannes

Bishop and St. Geneviève, 2926
 Homer crowned, 5183
 Literature and Arts, 2973
 Poor Fisherman, 2926
 portion of wall painting, 2923
 St. Geneviève at prayer, 2925
 St. Geneviève's Childhood, 2925
Pu Yi, Henry, first President of Manchukuo, 6511
Puzzle, books on the shelves, 5814, 5933
 broken plate, with picture, 6794, 6924
 chequered square, 5563, 5686
 Chinese railways, puzzles, 2611, 2731
 circular table-top, 5066, 5195
 crossword, how to make, 4343
 dog's kennel, 5195, 5315
 how did the farmer enlarge the fold? 2730, 2858
 how did the father divide his garden? 2859, 2982
 how did the king's jester escape? 4220, 4344
 how did the sisters cut the carpet? with
 pictures, 3472, 3597
 how was Robinson Crusoe's table made?
 with pictures, 3350, 3472
 king's guard, 4344, 4467
 laughing sailor, 4712, 4831
 magic square, 4096, 4220
 miller's sacks, with pictures, 3723
 mysterious Jacob's ladder, picture, 1246
 mysterious square, 4592, 4712
 patchwork quilt, 5686, 5814
 pennies; problems, 4831, 4952
 picture puzzles, 1371, 1494, 1862, 1990, 2358, 2486, 3969, 4095, 5310, 5438, 6174, 6300
 piece of silk, 6423, 6542
 puzzle rhymes and verses, 2234, 2380
 puzzles with paper and scissors, with
 picture, 1745
 scenes in history, 3598, 3724
 secret lock, 2362
 Siamese flag, 5314, 5438
 traveller's dinner, 4467, 4591
 trees in the orchard, 6300, 6423
 trees in the park, 1864
 twenty-five minute puzzles, 6672, 6796
 weaver and his cloth, 3842, 3963
 what-animals-are-these? 6934, 6058
 what-are-these-plants? 6544, 6668
 what-are-these-things? 6058, 6177
 who-are-these-people? 4216, 4342
Pycnogonida, sea spiders, 5595
Pygmalion and Galatia, story, 2890
Pygmy armadillo, or pichichiago, 2275
Pygmy hog, home of, 1658
Pygmy shrew, mammal, 2021, 293
Pylon, for electric cables, 107, 611
Pym, John, English statesman, 528, 1208, 521
Pyonson, Richard, English pioneer of
 printing, 1517
Pyramid, in geometry, how to find area
 of surface and cubic contents, 7076
Pyramids, Egypt, 426, 5379, 6874
 game, 5562
 Great Pyramid of Cheops, 4884
 mathematics used in building, 427
 how were the Pyramids built? with
 picture, 303

who built the pyramids of Mexico? 6727
 at Gizeh, 4085, 5384, 5387
 Great Pyramid, Gizeh, 4886, 5382
 pyramid in Mexico, 6727
 Sakkara pyramid, 5382
Pyrene, sacred Greek fountain, 8530
Pyrenees, mountain range forming the
 boundary between France and Spain,
 4164, 5269
 tunnel under, 6596
 Wilbur Wright's flight over them, 25
 peasant, 4162
 vista in the Pyrenees, 2247
Pyrethrum, flower, 6379
Pyrogallol acid, coal-tar product, 4472
Pyromorphite, lead ore, in colour, 1303
Pyrosoma, sea squirt, 5346
Pyrotechnics, what is meant by, 3889
Pyrrha, Greek myth of, 3531
Pyrrhic victory, what it is, 6232
Pyrrho, founder of scepticism, 3036
Pyrrhus, Epirote king and general,
 5780, 6232
Pythagoras, Greek philosopher and
 mathematician, 1037, 3119
 numbers studied by, 985
 set up monastery in Crotona, 5425
Pytheas, Greek navigator, 5157
 his claim to have been to Britain, 2397
Pythia, The priestess of Delphi, 5366
Pythias, Damon and, story, 4365
Pythius, architect-sculptor, who worked
 on Mausoleum at Halicarnassus, 4277
Python, reptile, characteristics, 4618
 killed by ants, 5959
 picture, 4619
Pyx, 12th-century sacred vessel, 6733

Q

Qatar, independent skeikdom of Arabia,
 6266
Quadri-jugate, meaning, 6497
Quadrillion, what it is, 5493
Quadri-valent, chemical term, 4347
Quadron, meaning of word, 7002
Quagga, zebra's native name, 1899
 Grey's quagga, now extinct, 1897
Quail, bird, characteristics, 4250
 mountain, in colour, 3141
Quakers, works of, 3342
 George Fox founds, 5451
Quaking grass, picture, 582
Quantock Hills, Somerset, 1384
Quarles, Francis; see Poetry Index
Quarry, of Bath stone and Nailsworth
 stone, 5850
Quarrying, Carrara marble, 5846-47
 Penryn granite, 5852
 picture-story, 5846-55
Quarterly Review, The, Keats attacked
 by, 2600
 Tory publication for which Southey
 wrote, 2474
Quarter Sessions, work of, 4776
Quartz, one of the hardest rocks, 768
 use in scientific work, 976
 weight of a cubic foot, 7074
 nodules of slate and schorl rock with
 veins of quartz, 2007
 rock with veins: white crystals, 2004
 rose quartz, mineral, 1304
 white crystals and yellow quartz, or
 cairngorm, 1301
Quartzite, layers contorted in cliffs at
 Muslac, 2004
Quassa, medicine obtained from bitter
 wood, 2689
Quaternary Period, begins at Pleistocene
 Age, 646, 1877
Quatre Bras; see Waterloo, battle of
Quatrefoil, heraldic charge, 928
Quebec, Canadian province, 2195
 arms, in colour, 4985
 flag, in colour, 6967
 Upper Kipawa River scene, 2193
Quebec, city of Canada, home of early
 settlers, 2195
 origin of name, 4387
 Wolfe's dramatic victory that estab-
 lished British supremacy in Canada,
 1330, 2075, 4126

Pictures of Quebec

bridge across the St. Lawrence, 558,
 2317
 Champlain's surrender to British, 2082

hydro-electric power plant, 2329
 view from river, 2328
 Wolfe on Heights of Abraham, 1331
Queen Elizabeth, liner built on the
 Clyde, 3578, 4104
 electricity the greatest power in, 3574
 artist's impression, 3573
 boiler room, 3705
 interior scenes, 3818-21, 3824-25
 radar equipment, 2462
 wheelhouse, 3704
Queen Mary, liner built on the Clyde,
 3577
 building operations in progress, 2650-56
 cross-section showing interior, 3710
 full-length view, 3710
 gymnasium, 3825
 in Trafalgar Square, artist's impression,
 3817
 radar equipment, 2465
 radar screen on bridge, 3706
 ready for launching, 2655
Queen Mary Reservoir, London, water
 intake at Laleham, 4507
Queen of Spain fritillary butterfly, with
 egg, caterpillar, and chrysalis, in colour,
 6208
Queens' College, Cambridge, arms, in
 colour, 4988
Queen's College, Oxford, arms, in colour,
 4988
Queensland, Australian State, 2575

Pictures of Queensland

arms of the State, in colour, 4985
 colliery at Tannymore, 2455
 field of sisal hemp, 2560
 flag, in colour, 6967
 pineapple plantation, 1812
 vanilla pod gathering, 2807
Queen Who Gave up her Boy, 6682
Quentin Durward, novel by Sir Walter
 Scott, 2792
Quest, Shackleton's ship on last Ant-
 arctic voyage, 6562
 giant seaweeds found by, 3052
Quest of the Blatant Beast, story, 5924
Quezal, Mexican, bird, in colour, 3143
Quezon City, capital of Philippines,
 6514
Quica opossum, marsupial, 2392, 2389
Quichuas, Peruvian Indian tribe, 7020
Quicklime, calcium oxide, 4470
Quicksand, what is the cause of a quick-
 sand? 1050
Quicksilver, what is quicksilver? 1801
 why does it roll up into balls? 1921
 why does it run away when touched?
 2418
 why do our hands keep dry when dipped
 in it? 4759

See also Mercury

Used for pens, 2034
Quill, see for pens, 2034
Quiller-Couch, Sir Arthur, English
 novelist and critic, 3712
 portrait, 3711
Quilting, how to make a handkerchief
 sachet in, with pictures, 4465
Quimper, town in Brittany, France, 4177
Quin Abbey, Co. Clare, Ireland, 3060
Quinine, obtained from cinchona, 2683
 Peru's old trade, 7021
Quinsworth, flower, in colour, 5395
Quintanus, governor of Sicily, his treat-
 ment of St. Agatha, 6812
Quintilian, Marcus, Roman orator and
 educator, 4955
Quintillion, what it is, 5493
Quintos, devotion to son, story, 6568
Quirinus, Roman god, 5860
Quiros, Pedro Fernandez de; see De
 Quiros
Quito, capital of Ecuador, 7021
 Government Palace, 7011
Quiver, heraldic charge, 4986
Quiz, how to run a party one, 3471
Quoits, how to play, 3844

R

R 34, first airship to cross the Atlantic,
 4452
 taking in hydrogen, 4450
R 100, British airship, 4452
 dining-room and staircases, 4450
R 101, British airship, 4452
Ra, Egyptian god of the sun, 6876

Raab, Hungarian city, picture, 4561
Rabat, port of Fez, Morocco, 6749
Sultan's palace, 6764
Rabbit, Australia's plague, 1036, 2443
 destructive to laburnum trees, 4042
 domestic breeds, 1036
 keeping rabbits as pets, 4219
 group of English rabbits, 1032
Rabbit-eared bandicoot, marsupial, 2394
Rabbit's ears, drawing trick, 6671
Rabbit Sets a Snare, story, 2758
Rabelais, Francois, French writer and humorist, 4454
 story of Gargantua, 5490
Raccoon, bear's relation, 792, 788
Raccoon dog, home and food, 542
Race, reason for different races, 3176
 table of weights of brain, 7068
Race from Marathon, story, 5088
Racehorse, picture, 1892
Raceme, what it is, 5520, 5890, 6495
Race with the Flood, story, 6952
Race with the Wolves, story, 6075
Rachel, Jacob's wife, 866
 meets Jacob at the well, 864
 tending flock of sheep, 621
 tomb, at Bethlehem, 3465
Rachmaninoff, Serge Vassilievitch, Russian composer, 150
 portrait, 145
Racine, Jean Baptiste, French tragic poet and writer of plays, 4455
Rack and wheel, in mechanics, 6350
Racket, tennis, how it is made, 4260
Rackets, how to play, with pictures, 5315
Rackliss, Michael, designer of Adam House, London, 4230
Racquet-tailed motmot, in colour, 3261
Radar, (Radiolocation), general description, 2461
 antennae, 2466
 cathode-ray tube in, 2467
 direction and detection of planes, 108
 echo from the Moon, 2464
 electronics in, 2714
 plan position indicator, 2470
 ships in fog guided, 5126
 ship's navigation guide, 3575

Pictures of Radar

aerial on naval vessel, 2462
 aerial which finds height of aircraft, 2463
 aircraft antennae, 2462
 aircraft shown on screen, 2466
 antennae and mast used in contact with Moon, 2467
 anti-aircraft unit, 2463
 balloon for checking instruments, 2462
 defence units, 2463
 guides ships through fog, 2468
 how it helps the airman, 2469
 indicator unit in aircraft, 2465
 instrument at an airport, 437
 mobile unit on an airfield, 2462
 Queen Elizabeth's equipment, 2462
 Queen Mary's equipment, 2465
 River Mersey on screen, 2466
 searchlight antennae, 2463
 screen in plane, 4693
 screen on bridge of Queen Mary, 3706
 weather-ship equipment, 2462
Radcliffe, Mrs. Ann, English novelist, 2348
Radcliffe Library, Oxford, 6473
Radiator, of motor-car, 4324 ; 4320
Radio : see Wireless
Radiolaria, mountains formed of, 6956
 magnified photographs of, 6957, 6959
Radiolocalion : see Radar
Radio Telephony, story of, 2215
 beam wireless, 2220
 Queen Elizabeth's lifeboats fitted with, 3574
 ships use, 2220
 valve, and what it is, 2218
 broadcasting station control room, 2215
 firemen using portable radio, 2218
 police patrol car equipped with, 2219
 Post Office international telephone exchange, 2218
 taxi service control, 2219
 voice transmission and reception, 2216-17
 See also Wireless Telegraph and Telephone

Radish, grown by ancient Egyptians, 427
 number of seeds produced, 1065, 6228

varieties, 2442
 pictures, 2438 ; in colour, 4417, 5642
Radium, element, its sources, 396
 Canada's deposits, 2196
 Earth's age theory changed by, 4017
 its teaching about atoms, 4222
 Madame Curie's discovery, 6316
Rae, Henrietta, English painter, her paintings, Apollo and Daphne, 3525
 Ophelia, 1104
Raeburn, Sir Henry, Scottish portrait painter, 2176, 5694 ; his portrait, 5691

Portraits by Raeburn

Lord Newton, in colour, 2179
 portrait of a lady, 2055
 Sir John Sinclair, 2055
 Two Fergusons, 2060
Raffia, obtained from palm tree, 2566
 how to make things in, 6543
Raffles, Sir Stamford Thomas, British administrator in Singapore, 3422
 discoverer of rafflesia arnoldi, 2806, 3056
Rafflesia arnoldi, biggest flower in the world, 206, 3056
Raft, of logs, being built, 5360-61
Raft spider, English water species, 5595
Ragged School Union, Lord Shaftesbury's work, 5458
Ragusa, port of Dalmatia, Yugoslavia, 4533
Ragwort, common, 4414
 hoary, flower, in colour, 5394
 marsh, flower, in colour, 6128
Rahere, founder of St. Bartholomew's Church, Smithfield, 5866
Raiko and the Goblin, story and picture, 3131
Rail, bird, different kinds, 4004
 Virginian rail, in colour, 3263
 water rail, in colour, 3023
Rail-car, streamlined Western Region rail-car, 4075
Railton, David, suggested the burial of the Unknown Warrior, 6724
Railton, William, English architect, designed Nelson Column, 4228
Railway, makers of the railway, 2745
 one of the world-wide benefits of British genius, 3943
 story of the railway, 4067, 4191
 accident averted on Baltimore and Ohio line, story, 6820
 Angola railways, 6753
 automatic signalling device on Western Region, 3952
 Belgian Congo railways, 6752
 block signal system, 3951
 brakes, vacuum and Westinghouse, 3944, 4079
 breakdown plant, 4074
 buffers, 4198
 carriage heating and lighting, 3943, 4073
 carriage types, 3949
 communication cord in carriages, 4072
 comparison with canal making, 4865
 early railways in British Isles, 1584
 electric : see Electric Railways
 first journey, 1893
 fog-signalling automatically, 4195
 gauge, standard and narrow, 3948
 grouping system explained, 3949, 5835
 increasing use of Diesel-electric engines, 3952
 kitchen, 4196
 length in various countries, 7060
 lines, world mileage figures, 3950
 luggage transport, 4199
 nationalisation grouping, 3950
 platform, 3949
 rails for coal-wagons came first, 5884
 rails laid with ends not touching, 3208
 3948
 signalling school, 4200
 signalling systems, 3951, 4191
 sleepers, 3948
 slip coaches, 4076
 steel sleepers, 3948
 track circuiting, 3952
 train from squares, drawing, 379
 tunnels, longest, 6595
 turntable, 4074
 wooden rails, 3945
 working the points, 3951

Wonder Questions

what are the little white posts by the side of the railway? 4022

what is the Dead Man's Handle? 2665
 why are we thrown forward when the train stops suddenly? 3649
 why does a man tap the wheels of a train at the station? 5252
 why does the platform slope at the end? 5247

Pictures of Railways

Albula Pass, 4673
 automatic signalling device on Western Region, 4075
 Barmen-Elberfeld overhead railway, 4427
 breakdown train, 4074
 bridge built by Stephenson, 2747
 buffers at the end of line, 4198
 development in 19th century, 1583
 early steam coach, 2745
 engine on turntable at King's Cross, 4074
 how carriages are cleaned, 4198
 how carriages are illuminated, 4073
 how carriages are slipped, 4076
 how mails are dealt with, 4634
 how run, picture-story, 4191-4200
 line, expansion allowance, 5441
 luggage moved by electric power, 4199
 Morris Track-layer putting down pre-fabricated track, 3951
 oil tank wagons, 3092
 one of the world's highest bridges, in Andes, 7014
 painting of station by W. P. Frith, 2556
 Parkside Station, (1830), 2747
 platelayers at work, 3951
 Pullman cars, 4197
 restaurant car, 4196
 rotary snow plough at work, 5120
 safety devices on line, 4195
 signalling methods, 4191-94
 signalmen being taught, 4200
 sleeping compartments, 4197
 streamlined Western Region rail-car, 4075
 swing-bridge for goods at Beccles, 4199
 Trevithick's little railway, 2747
 Yenisei River bridge, on Trans-Siberian railway, 6028

See also names of Railways ; Electric Railways ; Railway Engine ; Train

Railway engine, its construction, with pictures, 5235-41
 American, record run, 4067
 brakes, vacuum and Westinghouse, 3944, 4072
 coal consumption, 3945
 control, 4068, 4069
 details, 3946
 electrically controlled, 3952
 energy, 1613
 engine-driver's duties, 3949
 furnace, 3943
 how it picks up water without stopping, 3945
 how it works, 3206
 lifting and turning, 4074
 modern engine's tractive power, 3948
 Murdoch's the first to travel in England, 2748
 oiling, 4068
 piston action and speed, 3943
 sand box, 3945
 speed, economical, 4067
 steam pressure on piston, 3943
 steam-raising, 3943
 steam v. electric, tests, 3952
 Stephenson's Rocket, 2756
 tank engine, 3945
 Trevithick's, 2752, 3212
 water supply and how it is picked up, 3945, 4071
 wheels, 3945, 4070
 why does a railway engine puff? 3996
 why does its smoke go the other way? 4640
 why is a staff sometimes given to an engine driver? 6728

Pictures of Railway Engines

Britain's, in colour, 1041-44
 chart of its parts, 3946-47
 coaling, 4068
 construction, series, 5235-41
 Diesel-electric engine, 4075
 driver's control, 4069
 driving-wheels, 4070

early types, 2747
 electric, 2713, 4075
 foreign and colonial railways, in colour, 3509-12
 Hedley's Puffing Billy, 2747
 how an express engine picks up water without stopping, 4071
 how locomotive works, diagram, 3206-7
 leaving station, 4069
 lubrication, 4068
 methods of lifting, 4074
 oil-driven rail-car, 4075
 Stephenson's Rocket, 2747, 2750, 2753
 streamlined, in colour, 1041-3
Railway, Model, how to make scenery for, 6796
Railway Tickets, machine that issues, 5369
Railway, Underground: see Underground
Rain, all about the rain, 641, 2618, 2865
 annual fall, in England and Wales, 641
 Australia's great problem, 2444
 cotton-spinning and rain, 172
 seasons affect, 2744

Wonder Questions

can man make rain? 3395
 could we live without rain? 5862
 does all rain reach the Earth? 6599
 how can it snow and rain? 5004
 how far does rain sink into earth? 6599
 is it a sign of rain when the smoke blows down the chimney? 1181
 is it harmful to drink rain-water? 1876
 what are the rain-tanks at Aden? 6620
 where does the rain go? 1413
 which is the rainiest place? 5864
 why are the roads slippery on a wet day? 2665
 why does a cloud fall as rain? 4016
 why does it rain so much in Scotland? 6720

Rainy Day, painting by F. Walker, 2865
 scene near Tower Bridge, 1413
 shower, 4502

See also Raindrop and Weather
Rainbow, Bible story of rainbow, 376
 scientific explanation, 5816
 how many colours has it? 5492
 what is a rainbow? 5364

when we are looking at a rainbow, can other people see the other side? 1415
 where does it end? 6100
 the first rainbow, 375

Rainbow band, in spectrum, 3850
Rainbow Fish, pursuing fish lured into sea-anemone, 4857

Raindrop, molecules in, 4101
 solid matter in, 190

why are raindrops round? 190

Raine, Kathleen, British poet, 4084

Rainier, Mount, Washington State, 2240

Raisin, dried form of grape, 1818

drying in Sun, in Australia, 1819

Rajputs, Hindu race dominant in Northern India, 2072

Rake's Progress, The, Hogarth's pictures, 2050

Raleigh, Sir Walter, English admiral and historian, 5206

his colony of Virginia, 2075, 3791
 part in colonisation of America, 1205
 pitch in La Brea lake found, 6730

potatoes grown by, 2436
 story of Elizabeth and the cloak, 1082
 tree brought from West Indies, 3543

See also Poetry Index

Pictures of Raleigh

at tomb of Elizabeth, 5202
 boyhood, painting by Millais, 2071
 hears of lost colony, 5202
 lays down his cloak, 5202

plants first potatoes, 602
 portraits, 1077
 Spenser reading poem to, 739
 taken to Tower, 5202, 5205

trial, 5205
 writing in Tower, 5203
Raleigh, Walter, English scholar, 3831

Ralph Roister Doister, first English comedy, by Nicholas Udall, 857

Ram: see Sheep

Rama, his search for Sita, story, 659
Ramah, near Bethlehem, scene, 3468
Raman, Sir Chandrasekhara V., Indian scientist, 6317

Ramayana, Indian epic, 5674

Rameses II, king of Egypt, mummy discovered at Der-el-Bahari, 6860

probably oppressor of Israelites, 6876

status, 3895, 3896, 5383, 6861

Ramie, grass, description, 2568

Ramle, town in Palestine, 6269

Ramping fumitory, what it is like? 4416
 flower, in colour, 4417

Rampion, member of Bellflower family, 4544, 6493

flower, in colour, 5144

round-headed, flower, in colour, 5393

Ramsay, Allen, Scottish poet, 2102, 2222: see also Poetry Index

Ramsay, Allen, Scottish painter, 2176
 portraits by him, 2055, 2175

Ramsay, Sir William, Scottish chemist and physical scientist, 6313

argon discovered by him, 987

theory about smell, 3904

Ram's horn snail, mollusc, 6577

Ramson, see Broad-leaved garlic

Rand, or Witwatersrand, gold-mining centre in the Transvaal, 3188

Randers, seaport of Denmark, 5149

Rands, William Brighty: see Poetry Index

Rangoon, capital of Burma, 2814

harbour, 2817

Shwe Dagon pagoda, approach, 5084

Sule pagoda, 2817

surrender to the British, 2078

Rankin, Jeremiah Eames: see Poetry Index

Rape, grown for foliage, 2188

great broom, flower, in colour, 5143

Raphael, Italian painter, the most famous of his age, 825, 6190

his architectural work, 6111

influenced by Fra Bartolommeo, 819

tapestries designed by him, 6738

Pictures of Raphael

Last Moments of Raphael, by H. O'Neil, 6189

painting in Vatican, 6187

painting Madonna, 6189

portraits, 824, 6183

with friend, 6187

Pictures by Raphael

Balthasar Castiglione, 824

Creation of Sun, 247

Descent from Cross, 4825

La Belle Jardinière, 823

Madonna and Child, Munich, 823

Madonna and Child, Prado Gallery, 822

Madonna del Granduca, 821

Madonna in the Chair, 824

painting of Poetry, 241

Philosophy, 1038

Plato and Aristotle, 5825

Pope Julius II, 822

St. John in the Desert, 824

Sistine Madonna, 822

Vatican fresco, 891

Raphael, Mary F., Queen Guinevere, painting by, 6947

Raphael's Bible, name given to his decorations in the Vatican, 826

Raptors, birds of prey, 3625

Rapunzel's Golden Ladder, story, 3132

Raratonga, Cook Islands, flag, in colour, 6367

Raspberry, fruit in the seed, 1813

new fruit produced from, 1202, 1204

structure of, 834

as they grow, 1817

fruit, in colour, 3667

stone, with fruit, in colour, 3671

Rasputin, Russian priest, 5893

Rassam, Hormuzd, archaeologist, Assyrian excavations, 6870

Ras Shamra, Syria, archaeological discoveries, 6871

Ras Tannura, seaport on the Persian Gulf, 6265

Rat, pest to man, 1029, 1035

species, 1031, 1033

Ratchet wheel and pawl, mechanical device, 6351

Ratel, mammal, habits, 793, 789

Rates, what they are, 4860

Rationing, supplies maintained by, 5516

Ratisbon, or Regensburg, German city, 4423

architecture of cathedral, 5991

cathedral, exterior, 6000

Ratoon, what it is, 2311

Rats and the Salt, story, 4854

Rattan palm, description and uses, 2940, 2942

Rattlesnake, characteristics, 4620, 4619

Raven, bird, characteristics, 2763

speed of flight, 6352

feeding its young, 2773

great billed variety, 2773

in colour, 3022

Raven, The, story of Poe's poem, 4203

picture to poem, 3563

Ravenna, Italy, basilican churches in, 448, 5740

early Christian art centred at, 444

Exarch rules Ravenna, 2278

mosaics to be seen at, 5740

basilica, interior, 5752

Dante's tomb, 4922

mosaics, 74, 445, 449

St. Apollinare Nuovo, interior, 5749

Rawlings, Marjorie Kinnan, American writer, 4335

Rawlinson, Sir Henry, English Assyriologist who deciphered cuneiform inscriptions on Rock of Behistun, 6869

Ray, John, English naturalist, 5570

his classification of plants, 6489

portrait, 5569

Ray, cathode rays in vacuum tube, and discovery of X-rays, 2585

Ray, fish, British species, 5096

cuckoo, in colour, 5098

electric ray, or torpedo fish, 5105

shagreen, in colour, 5097

starry, in colour, 5097

Rayleigh, Lord John William, English chemist, 1050, 6310

refraction of sound proved by well-known experiment, 6062

portrait, 6309

Rayon, manufacture of, series, 6095-98

Razorbill, bird, 3999; in colour, 3624

Razor-shell, characteristics of, 6582

pictures, 1177, 6580, 6585

Read Nathan, inventor, 5373

Reade, Charles, English novelist and writer of plays, 5582, 3579

Reading, capital of Berkshire, famous for biscuit-making, 4110

arms, in colour, 4991

municipal buildings, 1714

READING

The following are actual headings of the chapters on Reading in the section of School Lessons

Learning to Read, 129

Picture Books, 258

Like a Flash, 387

Making a Newspaper, 509

Story Books and Word Books, 633

Some New Words, 758

The Working Letters, 877

Letters that Come Together, 1003

More About Word Families, 1126

More Rhymes and Stories, 1251

New Words and Stories, 1375

The Silent Letters, 1497

More Silent Letters, 1623

What the Animals Say, 1748

A Little Play to Act, 1870

Reading and Writing, sculpture by Falconet, 4650

Ready-Made Gentleman, story, 6079

pictures, 6072

Reality, Socratic doctrine, 1164

Realm of Fancy, picture to poem, 4313

Realms of God, kingdom of books, 109

Reaper, at work in cornfield, 1577

Reason, Socratic doctrine, 5829

is there a reason for everything? 4386

Rebekah, wife of Isaac, 624, 743

Rebekah at the Well, by Frederick Goodall, 623

Reciprocating Engine, 3212, 3213

Recorder, Robert, Welsh mathematician, 3491

Recorder, judge presiding over Quarter Sessions Court, 4778

Rectilinear motion, by lever, 6351

Reculver, Kent, ancient church, 1950

Red, why does red irritate a bull? 6233

Red admiral butterfly, in colour, 6205

Red alpine campion, plant, 5519

flower, in colour, 5642

Red and blue macaw, in colour, 3142
Red-backed shrike, bird, in colour, 3022
 nest and eggs, 2635
Red-banded sand wasp, 5843
Red banded fish, in colour, 5099
Red bartsia, what it is like, 4543
 flower, in colour, 5644
Red Bay, Co. Antrim, Northern Ireland, view, 3074
Red bearberry, what it is like, 5518
 flower, in colour, 5641
Red beet, of Goosefoot family, 2442
Red-billed hill-robin, bird, 3147
Red-billed toucan, bird, in colour, 3143
Red bird of paradise, 2772
Red blood cells: see Blood cells, red
Red-breasted goose, bird, in colour, 3262
Red-breasted merganser, in colour, 3024
Red campion, what it is like, 4782
 flower, 4778; in colour, 4288
Red chatterer, bird, in colour, 3263
Red cherry, what it is like, 4039
Red clover, what it is like, 4416
 liable to disease, 2188
 crop in Manitoba, 2187
 flower, in colour, 4417
Red-crested cardinal, bird, 2893
Red Cross, emblem of Red Cross Societies, 4674
 what is it? 5620
 See also Knights Templars
Red Cross Knight, in Faerie Queene, 5919
Red currants, fine cluster, 1816
 fruit, in colour, 3669
Red dead nettle, flower, in colour, 4285
Red Dragon, Welsh flag emblem, 6961
 flag, in colour, 6965
Red Ensign, what it is, 6962
 flag, in colour, 6965
Red flying squirrel: see Flying squirrel
Red grouse, bird, in colour, 2897
Red gurnard, fish, 5105
Red-headed woodpecker: see Woodpecker
Red hemp-nettle, in cornfields, 4541
 in colour, 4663
Red-hot poker, flower, 6379
Red Indians, basketry work by, 193
 few now left in U.S., 3677
 petroleum used by, 2963
 war with white travellers in Canada, 2318
 Cartier's meeting with Indians, 2190
 family in British Columbia, 2201
 head of a Red Indian, 89
 on horseback, 1902
 statues of two chiefs, 3688
Red kangaroo, 2393
Red kite, bird, 3636
Red-letter day, what it is, 5620
Red mullet, fish, 5101; in colour, 5097
Red nymph dragon-fly, in colour, 5713
Red Pepper, obtained from capsicum plant, 2804; in colour, 2686
Redpoll, bird, 2901, 2892; in colour, 3021
 nest and eggs, 2903
Red-poll cattle, 1154
Red-rattle, marsh flower, in colour, 6128
Red Riding Hood, story and picture, 899
Red River, or Song-koi, Indo-China, 6513
Red rove beetle, in colour, 6336
Red Sea, arm of the Indian Ocean stretching from Suez to the Strait of Babel-Mandeb, Pharaoh's hosts drowned in, 1118
Redshank, bird, habits of, 8376
 in colour, 2898
Red siskin, bird, in colour, 3263
Red Spider, really a mite, 5599, 5593
Red squirrel, 1030, 1032
Redstart, bird of thrush family, 3026
 black species, 3017
 in colour, 2765
Redwail, king of East Anglia, 2775
Redwing, bird of thrush family, 3026
 route of migration, 223
Red-winged wren, bird, in colour, 3261
Reed, Henry, British poet, 4084
Reed, Dr. Walter, American physician, 2628, 2623
 saluting American soldiers, 370
Reed, common, magnified, 584
Reed hunting, nest of, 2902, 2903
 picture of bird, 2892; in colour, 2766
Reed canary grass, 3307
Reed grass, 583
Reedling, bearded, bird, in colour, 2768

Reed mace, aquatic plant, 6012, 6009
Reed warbler, adult birds with young in nest, 3139; bird, in colour, 3023
Reeves, John Sims, English singer, 1285
Reflection, law of, in relation to light and sound, 5936, 6061
 how does still water reflect a distant scene? 310
Reflex action, what it is, 4892, 5984
Reformation, The, Calvinism in Netherlands, 5527
 dissolution of the monasteries, 1081
 great leaders, 3760, 7054
 in Switzerland, 4672, 6725
 Dawn of the Reformation, painting by W. F. Yeames, 119
Reform Bill (1832), 1585
Refraction, what is meant by the term, 1551, 3664, 4761
 in relation to sight and sound, 5937
 of light, how it causes the rainbow, 5384
 simple experiment illustrating, 4008
Refrigerator, on ships, 3573, 3824
 U.S. has more than rest of world, 3631
 how does it work? 1676
 how frozen meat is stored, 1677
Regamey, Guillaume, paintings by: Arab Horsemen, 1901
 A Team of Percheron horses, 1901
Regent bower bird, in colour, 3144
Regina, Saskatchewan, view of Parliament Buildings, 2330
Registan, Afghan desert, 6391
Registrar of Births, 6253
Regula Pastoralis, translated into English by Alfred the Great, 2908
Regulator, in railway engine, 3946, 3947
Regulus, Marcus Atilius, Roman general and hero, 1408, 4350
 leaving Rome for Carthage, 3341, 4351
Regulus, Saint, who he is, 2785
Rehoboam, king of Israel, 2356
Reichenbach Falls, near Meiringen, Switzerland, 4671
Reichstag, German parliament, 4298, 6856
 set on fire, 4303
Reid, Robert, American painter, 3288
White Parasol, painting by, 3294
Reims: see Rheims
Reindeer, distribution and home, 1404
 caribou of the North, 1398
 migration of, 222-3
 primitive drawing, 192
Reindeer moss, member of Lichen family, 702
Reis, Philip, telephone invention of, and picture, 1841
Rejected Addresses, by James and Horace Smith, 3956
Relativity, what it is, 3234
Relay, in telephone system, 1966, 1971
 electric, picture, 6850
 how it works, diagrams, 1972, 1973
Relay Race, game, 508
Religio Laici: see Religion of a Layman
Religion, ancient Egyptian, 425, 423
 ancient Greek and Roman, 3513
 asceticism in religion, 2030
 different conceptions of God, 2978
 in the British Commonwealth, 2972
 Jewish, 544
 mystery of numbers, 987
 See also Christianity and names of various religions
Religion of a Layman, by Dryden, 1610
Reliques of Ancient Poetry, collection of ballads by Dr. Thomas Percy, 2101
Rembrandt, Dutch painter, 1557, 6676
 painting portrait, 6675

Pictures by Rembrandt
 Old Lady, 72, 3779
 portraits and pictures, series, 1561-4
 portraits of himself, 1561, 1564, 6679
 Syndics of the Cloth Hall, 1557
Remembrance, sculpture by A. Mercie, 4648, 4650
Remembrance Day, 6724
Remigius, converted the Franks, 3917
Remondot, Marius, Broken Dream, sculpture by, 5255
 French Boy Scout, sculpture by, 5132
Remus: see Romulus and Remus
Remus, Uncle, tales of, 5583
Renaissance, The, account of the movement in Italy, 565

effect on rise of music, 141
 Italy's glory during, 3759
Renaissance architecture, 6107
 compared with Gothic style, 6111
 in England, 6219
 French masterpieces, 6333
 German style, 6371
 Rococo or Baroque style, 6113, 6371
 Spain and her fine buildings, 6372
 pictures, 6107 22. 6235-52. 6356 62
 See also under names of countries
Renan, Joseph Ernest, French religious writer, 4453
Renard, Captain, first real airship built by him, 4446
Renaud: see Rinaldo, legend of
Reni, Guido, Italian painter, 936
 Aurora, painting by, 938
 John the Baptist, painting by, 3719
Renker, Emil, Fatigue, sculpture by, 5254
Renmark, Australia, drying fruit, 2454
Rennie, John, Scottish bridge builder, 547
Rennie, Professor, cause of Isle of Wight disease in bees traced, 5492
Renoir, Pierre Auguste, French Impressionist painter, 3044
 paintings by him, 3043, 3171
Rent, what economic rent is, 5638
Reparations, after the First World War, 1824
Repin, Ilya Yefimovitch, Russian historical painter, 3398
Reptile, general account of, 4488
 how long do reptiles live? 6929
 in Cretaceous Period, 11, 42, 1636
 increase in Jurassic Age, 1505
 of Triassic Age, 1381
 wings developed by early reptiles, 2835

Pictures of Reptiles
 brain compared with that of other creatures, 2931
 British, in colour, facing 4469
 place in scale of life, 79
 snake family, 4615-19
 See also separate names
Repton School, arms, in colour, 4989
Reservoir, Britain's water supplies, picture series, 4504-12
Resht, Persian town, 6385
Resin, different kinds of, 2937
Resonance, nature of, 2092
Resonator, what it is, 440, 4759, 5370
 in wireless, 2090
Respiration, meaning of word, 3957
 See Breathing
Rest-arrow, flower, in colour, 5644
Resurrection, The, painting by Axel Ender, 4827
 painting by Burne-Jones, 4827
Retorts, gas-making, temperatures, 3334
 drawing of retort house, 3451
 retort house of gas works, 3448
Retreat of the 10,000 (401 to 399 B.C.), the march back home of Greeks under Xenophon, 6272
Retriever, breed of spaniel, 670, 665
Reuben, son of Jacob, 983
Réunion Island, French colony in Indian Ocean, 6750
Reuss, Swiss river, 4670
Reval, Estonia: see Tallinn
Revelation, Book of the, 616, 5877
Revenge, ship, Sir Richard Grenville's last fight in her, 5238, 5213
 picture to poem, 4437
Revere, Paul, in American War of Independence, 3793
 illustration to poem, Paul Revere's Ride, 3695
Reversals, regular and irregular, 6351
Reversible pawl, 6351
Revised Version, Bible, what it is, 6358
Rey, Polish author, 5027
Reykjavik, capital of Iceland, 5149
Reymont, Wladislaw, Polish novelist, 5023
Reynard the Fox, adventures of, 5219
Reynolds, Sir Joshua, English portrait painter, 2050, 5898
 mezzotints of his pictures, 2423
 portrait of artist, 4132
 talking to Chippendale, 3861
 visited by Dr. Johnson, 5699

Pictures by Reynolds

Age of Innocence, in colour, 2180
 Infant Samuel at prayer, 1736
 John the Baptist as boy, 3718
 Lady Cockburn and children, in colour, 2178
 Lady Delmé, mezzotint engraving, 2421
 Lavinia, Countess Spencer, 2057
 Lord Althorp, 2059
 Lord Heathfield, 2060
 Master Hare, 3779
 Miss Bowles, 72, 2180
 Mrs. Siddons, 2053
 portrait of himself, 5701
 Strawberry Girl, 2058
 Reynolds-Stevens, W., his sculpture, Guinevere and the Nestling, 4767
 Rhadamantus, judge of the underworld, 3532, 6930
 Rhagium beetle, in colour, 6336
 Rhamphosynchus, fossil, 1507
 Rhea, bird, 4368, 4367, 4369
 Rhea, mythological goddess, 3514
 Rhebok, African antelope, 1400, 1401
 Rheims, or Reims, city of Champagne, France, 5989
 picture of cathedral, 5996
 Rheostat, electro-magnetic apparatus, 611
 Rhesus monkey, 164
 Rhine, river of western Europe, 4066
 legends of the Rhine, 4422
 view at St. Goar, 4423
 Rhino-birds, on back of rhinoceros, 1769
 Rhinoceros, animal, 1772
 prehistoric monster, 5860
 two-horned, from New Guinea, 1775
 various types, 40, 1771
 with birds on its back, 1769
 woolly, of Pleistocene Age, 1881
 Rhinoceros, hornbill, bird, 3255
 Rhizoid, what it is, 3412
 Rhizome, stem form, 6494
 Rhode Island, American State, flag, in colour, 6970
 Rhode Island Red, fowl, 4253
 Rhodes, Cecil, South African statesman, 3312
 cottage where he died, 3195
 grave in Matopos Hills, 3311
 memorial at Rondebosch, 3195
 Physical Energy, Watts' monument to, 3195, 4772
 Rhodes, island of the Dodecanese, Italy
 cedes it to Greece, 4909
 ancient statuette from, 4396
 Greek vase from, 4025
 Rhodes, Colossus of, 4403, 4884, 4887
 Rhodesia, British territory in Central Africa, divided into Northern and Southern, 3312, 3314
 Birchenough Bridge, over the River Sabi, 3313
 flags, in colour, 6968
 Rhode's grave in Matopos Hills, 3311
 Victoria Falls, 2500, 3313
 wooded country scene, 2372
 Zambesi River, 2499
 map, in colour, 7099
 map, industrial life, 3196
 map, physical features, 3198
 Rhododendron, pink pearl, flower, 6380
 Rhombus, seaweed, in colour, 3414
 Rhombus, how to find area, 7075
 Rhône, river of Switzerland and France, 4169, 4678
 view at Avignon, 4175
 Rhubarb, cultivation in England, 2434
 member of Persicaria family, 5520
 Turkey rhubarb, in colour, 2687
 Ruddian Castle, Flintshire, 962
 Rhyme, examples, 240
 game, 1372
 nursery rhymes: see Poetry Index
 puzzle rhymes and verses, 2234, 2360
 Rhysia ichneumon-fly, in colour, 5714
 Ribblesdale, Lord, Sargent's painting in National Gallery, 2668
 Ribboned prosciaccia, beetle, in colour, 6336A
 Ribbon laminaria, seaweed, 3415
 Ribera, José, Spanish painter, 1308
 his painting, Adoration of the Shepherds, 1311
 Rib grass, 2186
 Ribs, position in body, 1196, 1569
 Riccio, Domenico: see Brusasorci
 Rice, general account, 1700

chief crop of China, 6502
 climate suitable for it, 2822
 cultivated in Indo-China, 6513
 food value, 1702, 2429
 bound into small sheaves, 1700
 bullocks working in flooded fields in Burma, 1703
 cultivation in America, 1701
 elephant ploughing field in Ceylon, 1703
 fields in Japan, 5970, 6619, 6626
 picture of the grain, 1696
 terraced fields in China and the Philippines, 1699
 terraced fields in Java, 5978
 Rice bird, in colour, 3143
 Rice-grass, used for land reclamation, 6724
 Rich, Claudius James, pioneer of excavation in Mesopotamia, 8863
 Richard I, king of England, 720, 3270
 found by Blondel, 1647
 statue near House of Lords, 720
 flags, in colour, 6968
 hears Blondel singing, 1649
 meeting with Saladin, 3267
 sets free Bertram de Gourdan, 1733
 statue in London, 3268
 Richard II, king of England, short account of reign, 956
 Richard III, king of England, 960
 Richards, Laura E.: see Poetry Index
 Richardson, Henry Handel, Australian writer, 4336
 Richardson, Robert, Australian poet, 4206
 Richardson, Samuel, English novelist, 2347; portrait, 2349
 Richborough, Kent, archaeological discoveries at, 8998
 Roman castle, 591
 Richelieu, Cardinal Armand de, French statesman and author, 3922
 influence in building of the Louvre, 6370
 tomb in Church of the Sorbonne, Paris, 4645
 portrait, 3917
 Rich Man's Diamond, The, story, 3742
 Rich Man Who Lost His Appetite, The, story, 1768
 Richmond, Sir W. B., Venus and Anchises, painting by him, 3526
 Richmond, Surrey town on the Thames, bridge designed by James Paine, 6471
 Richmond, Yorkshire, castle, 1951
 Richter, Christian, his miniature of Cromwell, 71
 Richter, Herbert Davis, English still life and landscape painter, 2877
 Richthofen, Baron Ferdinand von, German traveller, 776
 Rich Villain, The, story, 6573
 Rico, Martin, Spanish painter, 3400
 Riddles, 2234, 2380, 6672
 Ride a Cock-horse, rhyme, music, and picture, 6525
 Ride of Paul Revere, picture to poem, 3695
 Ride on a Wild Horse, The, picture to poem, 5415
 Riding, hints for young riders, 6925
 Riemschneider, Tilmann, German sculptor, 4644
 Rienzi, Roman tribune, 4794
 Rievaulx Abbey, ruins in the North Riding of Yorkshire, 843, 962
 Rift Valley, Great, Kenya, prehistoric associations, 3315
 Riga, capital of Latvia, 6033, 6016
 peace treaty between Poland and Russia, 5029
 scenes, 6030
 Rigel, seventh brightest star, 3728, 3851
 Rigi, Swiss mountain, 4666
 Rigid buckler fern, in colour, 1797
 Rigsdag, Danish parliament, 6856
 Riksdag, Dutch parliament, 6856
 Riksdag, Swedish Parliament, 6856
 Riley, James Whitcomb, American poet, a famous writer for children, 4205
 portrait, 4201
 See also Poetry Index
 Rilke, Rainer Maria, Austrian poet, 4700
 Rilo monastery, in Balkans, 5785
 Rimbaud, Jean Nicholas Arthur, Belgian poet, 4458
 Rimsky-Korsakoff, Nicholas Andreievich, Russian composer, 150

Rinaldo, or Renaud, legend, 5646
 poem by Tasso, 4583
 Ring, how to find dimensions, 7076
 Saxton ring, picture, 725
 Ring and coin, trick, with picture, 3800
 Ring and the Book, by Browning, 8458
 Ring cobra, snake, 4615
 Ringed club dragon-fly, insect, in colour, 5713
 Ringed deeplet anemone, flower, in colour, 1554
 Ringed plover, bird, 3023, 3875
 Ringlet butterfly, with egg, caterpillar, and chrysalis, in colour, 6208
 Ring of Great Stones, The, story, 4737
 Ring ousel, bird, in colour, 2898
 Ring out the Old, picture to poem, 6908
 Ring-tailed coati, animal, 788
 Ring-tailed lemur, animal, 164
 Ring-tailed opossum, animal, 2396
 Ring-taw, game, 5562
 Rinkart, Martin: see Poetry Index
 Rio de Janeiro, capital of Brazil, 7002, 7016, 7010
 statue of Christ at, 7014
 Rio de Oro, map, in colour, 7098
 Rio Grande del Norte, river dividing U.S.A. and Mexico, 6999
 desert before and after irrigation, 5977
 Rio Grande do Sul, Brazilian State, 7016
 Rio Muni, map, in colour, 7099
 Rio Negro, tributary of Amazon, 7006
 at Manaus, 7010
 Ripon, cathedral city in the West Riding of Yorkshire, 5672
 arms, in colour, 4991
 Ripon Falls, on River Nile, Uganda, 3316, 2500
 Rip van Winkle, story with picture, 4851
 written by Washington Irving, 4331
 Rissio dolphin, Pelorus Jack, 2151
 River earwig, insect, in colour, 5713
 River padder, beetle, in colour, 6335
 Rivers, general account of, 2493
 areas of biggest river basins, 7059
 canalised, 4865
 English, alphabetical list, 7177
 fishes that live in, 4975
 flowers of, 6007, 6129
 longest rivers, 7059
 power from, 2494, 5806
 worshipped in ancient days, 3530
 Wonder Questions
 are the rivers always growing longer? 6848
 can a river flow uphill? 6600
 does a river ever flow from the sea into the land? 6723
 how is a delta made? 1679
 why are rivers always moving? 6104
 why can we not always see the bottom of a river? 4763
 why does a river curve? 4130
 why does not the Moon make waves on rivers? 6603
 why do the beds of rivers change? 5619
 Pictures
 dredging methods, 2916, 2917
 flowers of, 6007, 6009; colour, 6129-30
 flowing inland at Argostoli, 6726
 how it runs uphill, 6601
 hundred great, diagram, 6847
 winding through plain, 2132
 Riverside, city of California, Magnolia Avenue, 3807
 Riveting, hydraulic-riveting sides of ship, 2652
 Riviera, Mediterranean pleasure resort, 4171, 4739
 Riviere, Briton, English painter, Apollo, painting by, 3524
 Christ in Wilderness, painting by, 3839
 Riyadh, Arabian city, capital of Nejd, 6265
 Roach, fish of carp family, 4979
 in colour, facing 5197
 Road, general account of, 2156
 Roman roads, 2157
 rubber paving experiments, 1168
 Wonder Questions
 how did the white line on the road begin? 5864
 how does traffic work its own signals? with diagrams, 6850-52
 what are the rules of the road? 6837

why are the roads slippery on a wet day? 2665
 why do two sides of a road meet in the distance? 5122
Pictures of Roads
 roads and road-making, series, 2159-2169
 See also names of specific roads
Road-runner, South American bird, 3379, 3377
Roast-beef plant, name of fetid iris, 4780
Robber crabs, coconut diet of, 5476
Robber dragon-fly, in colour, 5713
Robbers and the soldiers, trick, with picture, 5068
Robert, king of Sicily, legend of, 31
Robert, duke of Normandy, father of William the Conqueror, 3149
Robert of Eu, Bayeux tapestry picture, 714
Robert of Sorbonne, the Sorbonne named after, 6103
Robert, Hubert, French painter and engraver, 1690
Robert, Léopold, French painter, 1808
Robert Barnes, fellow fine, nursery rhyme picture, 232
Roberts, Sir Charles George, Canadian writer and naturalist, 4332
Roberts, Frederick, Earl, British field-marshal, Furse's portrait in Tate Gallery, 2545
Roberts, Kenneth, American writer, 4335
Robertson, Ethel, Australian writer, real name of Henry Handel Richardson, 4336
Robertson, G. E., his painting, Reading the Bible in Tudor Times, 1083
Robertson, Sir William, on physical fitness, 3222
Robespierre, Maximilian, French revolutionary, 854, 4044
 facing his captors, 651
 portrait, 647
Robin, distribution and habits, 3026
 American, picture, 3017
 English, in colour, 2899
 nest, 3019
 red-billed hill robin, 3147
Robin Hood and His Merry Men, story and pictures, 3365
Robinson, Rev. Edward, work in mapping Holy Land, 6988
Robinson, Edwin Arlington, American poet, 4205
Robinson, Mary, Gainsborough's portrait of, 2052
Robinson Crusoe, origin of story, 1482, 2380
Robinson Crusoe's table, puzzle, with pictures, 3350, 3472
Rob Roy, novel by Sir Walter Scott, 2722
 meeting with Bailie Nicol Jarvie, 2721
Rob Roy, steamship, 3736
Roche Bayard, rock near Dinant, 5646
Roche-grosse, Georges, Rising of French Peasantry, painting by, 3919
Roche, Mazo de la, Canadian writer, 4336; portrait, 4331
Roche, Walter, Shakespeare's teacher, 4473
Rochester, Earl of: see Poetry Index
Rochester, old Kentish city, 717
 arms, in colour, 4991
 bridge over Medway, 3331
 gateway of castle, 1590
 keep, 963
 Roman wall, 722
Rochester Cathedral, architecture, 5866
 built by Gundulf the Weeper, 4226
 before restoration, 5878
 nave, 719
 Norman doorway, 5877
 Simon de Montfort enters on horseback, 839
Rock, story of the rocks, 642, 765
 building a rock garden, 5311
 Carboniferous and Permian, 1260
 Devonian Age, 1136
 how to make a collection of rocks, 6670
 ice, its effect on rocks, 1880
 Jurassic, 1505
 oxygen absorbed by, 1050
 quarrying of, 5845
 Silurian, 1011
 Triassic, 1381

Wonder Questions

does a rock breathe? 1050
 how did the silver streak get into the rock? 4997
 how does a rock become folded? 5735
 Breccia, 2005
 Peninnis Point, Scilly Isles, 2129
 various kinds, series, 2003-2007
 veins in, 4997
Rock cook, fish, in colour, 5098
Rock dove, bird, in colour, 3024
Rockefeller Foundation, work in China, 6509
Rocket, Stephenson's engine, 2755, 3214
 weight compared with that of a modern locomotive, 3950
 engine as it exists today, 2747
 locomotive on its first journey, 2750
 sketched by Nasmyth, 5941
 Stephenson at work on a model, 2753
Rocket, air projection may provide future power, 4810
 what makes it go up? 4518
Rocket Kite Aerial, direction-finder aid for ships, 3575
Rockhopper penguin, bird, 4001
Rock leech, worm, 6827
Rockling, fish, 5105; in colour, 5098
Rock milk, mineral, 1303
Rock pipit, bird, in colour, 3024
Rock rose, what it is like, 5023
 flower, in colour, 5141
Rock-salmon, dog-fish's name, 5227
Rock samphire, what it is like, 5762
Rock spleenwort, fern, in colour, 1800
Rockville, Pennsylvania, bridge over Susquehanna River, 3803
Rocky Mountains, North America, 2194, 3674
 glacier being climbed, 2202
 goats and sheep, 1280-1
 Lake of Hanging Glaciers, 2203
 Lizard Head, 3808
 log cabin, 2200
 mountain path, 2197
 Tower of Babel, 2204
 Valley of Ten Peaks, 2198
Roda, island in Nile, Nilometer at, 6881
Rodent, animal family, 1029
 birds that prey on them, 3625
Rodin, François Auguste, French sculptor, 4648
 his influence on modern sculpture, 4895
 his sculptures: Age of Bronze, 5136
 Burghers of Calais, 4647
 St. John the Baptist, 4652
 The Thinker, 4033
 Thought, 4650
Rodney, Admiral Lord, naval victory off St. Lucia, 3555
Rodochrosite, mineral, 1302
Rod of Aesculapius, heraldic charge, 4986
Rodriguez, island dependency of Mauritius, 3422
Roe, Sir A. V., aeroplane pioneer, 4111
 portrait, 4102
Roe, Fred, Velasquez and Philip IV., painting by him, 6677
Roe, Sir Thomas, ambassador sent to India to Jehan Gir, 2944
Roebuck, characteristics, 1404
Roebuck, Dampier's ship on his second voyage to Australia, 2380
Roederstein, Otilie, Their Daily Bread, painting, 3534
Roemer, Olaus, Danish astronomer, 4993
Rogers, Mary, heroism in wreck of Stella, 6446
Rogers, Samuel: see Poetry Index
Rogue and the King, story with picture, 2018
Roland, Frankish hero at battle of Roncesvalles, 1025
 legends of Roland, 6817
 meeting with Oliver, 1022
Roland, Madame Manon Jeanne, French Girondist, 654, 3134
 portrait, 647
 on way to execution, 649, 3130
Roland, Child, story, 2514
Rolland, Romain, French writer, 4458
Roller, bird, characteristics, 3266
 long-tailed roller, in colour, 3264

Rollo, Duke, Viking conqueror of Normandy, 3918
Rolls, Hon. C. S., English engineer, driving motor-car, 4318
Rolls-Royce, car, 4319
Rolt, Daniel, invented winding spool for spiders' webs, 4391
Roma, goddess of Rome, 1536
Roma, Italian airport, 4451
Romains, Jules, French writer, 4458
Roman architecture, features, 5502
 in England, 5865
 amphitheatres and arenas, 5495, 5509.
 5511, 5512
 aqueducts, 5280, 5284, 5413, 5507
 arches, 76, 1779
 baths, 1780, 4180
 bridges, 4562, 5511
 examples in Britain, 722-23
 temples, 1782, 5414, 5501, 5509
 theatres, 5511, 6990, 6992
Roman art, excavations in Italy, 6994
 discoveries in England, 6997
 mosaic paving, 6732
 reliefs and portrait sculpture, 4404
 tapestry weaving, 6738
 in England, 722-23, 6991-92
 mosaic pavement at St. Albans, 6991
 portraits and wall pictures, 323
 sculptures, 722-23, 4395, 4397-4402, 5130, 5134-36, 6992
Roman Britain: see Britain, Ancient
Roman Catholic Church, British bishops rejected St. Augustine, 2646
 dispute with State, 6921
 English Christians adhere to, 2778
 its foundation, 6916
 strife with Greek Church, 1908
Romance of the Rose, 13th-century French poem, 4453
Romanesque architecture, characteristic features, 5744
 Cluny abbey church its most famous example, 5745
 decorative sculpture on churches, 4406
 English style called Norman, 5865
 wall paintings still surviving, 450
 specimens of architecture, 5747-5754
Roman literature, story of, 5425, 5553
Roman numerals, symbols, 7073
Romano, Giulio, architectural work, 6111
Romanoff, Michael, Russian tsar who founded the Romanoff dynasty, 5894
Romansch, Swiss language, 5245
Roman snail, 6585
Rome, capital of Italy, on the Tiber, 4912
 architecture: see Roman architecture
 art: see Roman art
 basilican churches, 448, 5740
 beautified by Augustus, 1538, 2876
 burning, under Nero, 2877
 catacombs built by Early Christians, 444
 catacombs explored by Giambattista de Rossi, 6994
 capital of Empire moved to Byzantium, 6916
 causes of decay, 1538, 1786, 1905, 4353
 character of people, 1408, 1536
 Church of St. Maria Sopra Minerva, 5892
 conquest of Spain, 5272
 European chaos after fall of Roman Empire, 2478
 famous men of Rome, 4349
 gladiatorial combats, 1536
 gods of ancient Rome, 3513
 height of Antonine and Trajan columns, 3284
 history of excavations, 6994
 invasions of Britain, 2397, 6918
 law codes, 1536, 4774
 Michael Angelo's work there, 6113, 6184
 Pantheon's architecture, 5504
 persecution of Christians, 6916
 Pliny on its glory, 1786
 Renaissance churches and palaces, 6111
 road-making, 2157
 Rome under the Caesars, 2873
 story of ancient Rome, 1405, 1535, 1785
 war with Attila, 2156
 war with Carthage, 1405
Wonder Questions
 how did the Romans measure distance? 3284

what are the Seven Hills? 6355
what was the Appian Way? 6488

Pictures of Rome

Appian Way, 1780
Appian Way, reconstructed, 5499
arch of Constantine, 1779
arch of Janus, 1781
arch of Septimius Severus, 5512
arch of Titus, 1779
arch of Trajan, 1779
bar money of 4th century a.c., 5391
Baths of Caracalla, 1780, 1787
bridge built by Hadrian, 1785
Capitol in ancient days, 1405
castle of St. Angelo, 1781
catacomb, 445
chariot race, 1907
Colosseum, 1535, 1783, 5509
column of Phocas, 5511
Conservatori Palace, 6121
Farnese Palace, 6118, 6120, 6122
Forum ruins, 1778, 1780, 1781
fountain, 4921
Garibaldi statue, 897
general views, 1782, 4921
Girard-Torlonia Palace, 6116
map of Roman Empire, in colour, 7092
Marcus Aurelius column, 5507
meeting of early Christians, 1905
palace of Senate, 4921
Palatine Hill, 1406, 1780
Pantheon, 1782, 5501, 5504
procession in Forum, 5501
Romans in Britain, 589, 2157
ruins of an early church, 1780
St. Maria Sopra Minerva, 5987
St. Paul-outside-the-Walls, 5749
St. Peter's, 4909, 4921, 6119
St. Peter Montoria, 6117
Sistine Chapel paintings, 687, 690-1, 695
Temple of Castor and Pollux, 5507
Temple of Vespasian, 5511
Temple of Vesta, 1781
Temple of Vestal Virgins, 1783
Tomb of Cecilia Metella, 1781
Trajan's Column, 1782
Trajan's Forum, 5501
Vatican, 6119, 6121
Via dell' Impero, 4911
Victor Emmanuel monument, 4923, 4783
Victor Emmanuel statue, 4922
view from roof of St. Peter's, 4919
Villa Borghese, 4921
Villa Farnesina, 6120

See also Colosseum, St. Peter's, Vatican

Romeo and Juliet, story of Shakespeare's play, 6161
Queen Mab quoted, 6534
Romeo at tomb of Juliet, 6167
Romilly, Sir Samuel, English statesman and lawyer, 1582, 5448
Rommel, Field-Marshal, German leader during Second World War, 1944
Romney, George, English historical and portrait painter, 2175, 5700

Pictures by Romney

Girl Reading, 745
Lady Craven, 2055
Lady Hamilton, 2421
Lady Kerr, in colour, 2178
Mr. and Mrs. Lindow, 2054
Mrs. Mark Currie, 2054
Mrs. Robinson (Perdita), in colour, 2177
portrait of himself, 5691
Romney sheep, characteristics, 1284
Romsdal, Norway, tourist region, 5150
Romsey Abbey, Saxon rood, 4765
view, 5876
Romulus and Remus, who were they? 5860
Romulus and Remus, sculpture, 1784
Romulus Momyllus, who he was, 6838
Ronald, Sir Landon, English composer, 1269
Ronalds, Sir Francis, English electrical engineer and meteorologist, 1602
Roncesvalles, battle of, 1025, 5411
Rondebosch, South Africa, Groot Schuur, Prime Minister's residence, 3195
Rhodes Memorial, 3195
Ronsard, Pierre de, French poet, 4454
Röntgen, Wilhelm Konrad, German scientist, 2585, 6313
picture, 6311

Röntgen rays: see X-rays
Roof of the World, Pamir Plateau, 6500
Rook, bird, characteristics, 2764
feeding habits, 6855
speed of flight, 6852
bird, in colour, 2767
young leaving nest, 2763
Rooke, Alan, British poet, 4084
Rooke, J. M., his paintings: Ahab meeting Elijah, 2605
Ahab speaking to Naboth, 2604
Roosevelt, Franklin Delano, American president, 3798, 6478, 6484
Atlantic Charter agreement with Britain, 1943
statue in Grosvenor Square, London, 4763
portrait, 3791
Roosevelt, Theodore, American president, 3796
portrait, 3791
Root, structure and use, 457
different kinds, 6494
sections of roots, 330, 549
some peculiar examples, 456
Rope, picture story, 179-182
why does a rope go on swinging? 3040
why does rope never lie straight when thrown on the ground? 2787
Rope sprocket wheel, 6349
Rope that Broke, The, story, 4969
Rope transmission, 6349
Rope twist lever, 6349
Rope-walk, modern, 182
Roraima, flat-topped mountain where British Guiana, Brazil, and Venezuela meet, 3558; picture, 2249
Rorqual, sea mammal, 2149
Rosalind, in As You Like It, 6048
giving Orlando a chain, 1103
with Celia in Forest of Arden, 1103
Rosario, city of Argentina, view from River Paraná, 7009
Rosas, General, suppressed Indian rising in Argentina, 7002
Rosbotham, Hannah, heroism in storm, story, 6572
Roscoe, William: see Poetry Index
Roscommon sheep, Ireland's only native stock, 1234
Rose, cultivation effects, 6257
dog: see Dog rose
how to make paper roses, 5813
legend of the rose, 4731
members of the Rose family, 4284, 4780, 5518, 6008
method of producing new varieties, 6257
enlarged section of rose-hip, 949
garden varieties, 6259, 6379-82, 6384
wild varieties, in colour, 3669, 4905, 4908, 4285, 5644
Roseate spoonbill, bird, in colour, 3262
Roseate tern, bird, in colour, 2897
Rose-bay, what it is like, 4782
flower, in colour, 4905
Rose beetle, in colour, 6335
Rose-coloured orache, 5762
Rose-crested cockatoo, 3499
Rosemary, wild: see Marsh andromeda
Rose of Jericho, how seed is scattered, 949
legend, 4734
Rose quartz, mineral, 1304
Rose-root, flower, 5521
Rosetta Stone, gave key to hieroglyphic alphabet, 5491, 6875
set up under Ptolemy V, 6873
what is it? 6596
picture, 685
Rosin: see Resin
Roskilde Cathedral, Denmark, 5164
Ross, Sir James Clark, British Arctic and Antarctic explorer, 4604, 6550
portrait, 4597
Ross, Sir John, Scottish Arctic explorer, 4604
portrait, 4597
Ross, Sir Ronald, British physician and bacteriologist, 2628, 2623
Ross Dependency, Antarctic region under New Zealand administration, 2697
Rosse, Lord, English astronomer, great telescope of, 4861
Rossellini, French archaeologist, 6860
Rossellino, Antonio, Florentine sculptor, 4524

Rossetti, Christina, English poet, 4078
hymns written by, 1760
See also Poetry Index
Rossetti, Dante, Gabriel, English poet and painter, 2543, 4078
stained glass work, 6731
his paintings, Beata Beatrix, 2551
Lith, 2556
The Annunciation, 2550
Rossi, de: see De Rossi
Rossini, Gioachino, Italian operatic composer, 150, 145
Ross Island, Scott winters on, 6558
Ross Sea, Sir J. C. Ross discovered, 6550
Rossy Apple, The, story, 2141
Rosy chrysmenia, seaweed, 3414
Rosy maple moth, of U.S.A., caterpillar, in colour, 62
Rosy starling, characteristics and food of, 2394, 2893
Rotation of crops, growing different crops on the same land in regular succession, 697, 2174
Rothenstein, Sir William, English painter, 2678
Rothermere, Lord, newspaper proprietor, 4112; portrait, 4102
Rothschoenberg tunnel, Saxony, 6596
Rotorua, resort in North Island, New Zealand, 2694
boiling mud pool, 2703
general view, 2704
Rotterdam, port of Holland, 5531
Rouault, Georges, French painter, 3046
Roubaix, French town, manufacturers receiving charter, 3919
Rouen, old capital of Normandy, France, 4170
cathedral, view of west front, 5995
figures on tomb in cathedral, 4656
Saint Ouen church, 4175
Rouget de Lisle, Claude, French writer of songs, 1231, 4456
composing and singing the Marseillaise, 651, 4049
See also Poetry Index
Rough chervil, flower, in colour, 4288
Rough hawk-bit, member of Composite family, 4414; flower, in colour, 4419
Rough parsnip, opopanax obtained from, 2938
Rough sow-thistle, food of rabbits, 5022
flower, in colour, 5144
Roundabout, does an outside horse move faster than the others? 6800
Roundels, in heraldry, in colour, 926
Rounders, game, with diagram, 6923
Round-headed rampion, 5268
flower, in colour, 5393
Round-leaved wintergreen, flowers, 4782
Round polyides, seaweed, 3416
Round Table, Knights of the, 6942
See also Arthur, King
Round tag, game, 3721
Rousseau, Henri, French landscape painter, 2790, 3046
The Pond, painting by, 2794
Rousseau, Jean-Jacques, French-Swiss philosopher and writer, 648, 4256, 4456
portrait, 4453
Rove-beetle, habits of, 6331
Rove tunnel, France, longest canal tunnel, 6596
Rowan, how he took a message to Garcia, 6949
Rowan tree: see Mountain ash
Rowe, Nicholas, dramatist, edited Shakespeare, 4476
Rowing, learning to row, with pictures, 6055
manufacture of racing boat, 4264
Rowntree's, foundation of the cocoa firm at York, 4108
Royal Academy of Arts, foundation of, 2425, 5692
Royal Air Force, part played in Second World War, 1942, 1945
ensign, in colour, 6968
insignia, in colour, 6980
Royal arms, inspired by Psalms, 2110
in colour, 4985
Royal Canadian Mounted Police: see Canadian Mounted Police
Royal Exchange, London, story of, 4230
architecture, 6472; picture, 1215
Royal fern, in colour, 1797

Royal Institute of British Architects, headquarters, 6615
 Royal Institute of Painters in Water-Colours, 2426
 Royalist, painting by John Pettie, 1209
 Royal mail, flag, in colour, 6966
 Royal Standard, heraldry of, 4983
 flags, in colour, 6965, 6968
 Royce, Sir Henry, founder of Rolls-Royce Company, 4111; portrait, 4102
 Roys, Cape, Shackleton at, 6554
 Royer, Lionel, Vision of Joan of Arc, painting by, 2259
 Rozycki, Polish musician, 5029
 Ruanda-Urundi, Belgian Congo acquires, 6752
 Rub-a-dub-dub, rhyme and picture, 231
 Rubaiyat of Omar Khayyam, Persian poem, translated by Edward Fitzgerald, 4077, 5675
 Rubber, plants which produce, 2568
 first seedlings in Malaya sown in Singapore, 3422
 how does it rub out ink? 681
 Malaya's production, 3424
 Pará's trade, 7016
 Sarawak's production, 3425
 story of introduction of trees into Old World, 1168
 synthetic, from oil, 2963
 uses in industry, 1165
 vulcanisation explained, 1168
 Pictures of Rubber
 making motor tyres, 1409-12
 natives beating raw product, 1167
 picture-story, 1169-1174
 plantations and trees, 2565, 2567
 pneumatic tyre of aeroplane, 1167
 rubber surfaced roadway, 2163
 tappers with pails of latex, 1165
 Rubens, Peter Paul, Flemish painter, 1421, 6674
 paintings in Antwerp Cathedral, 6652
 statue in Antwerp, 5649
 visited by Marie Medici, 6675
 Pictures by Rubens
 Garland of Fruit, 1425
 Mother and Child, 1425
 Painter's sons, 1425
 portraits, 6675, 6679
 Rubicon, river in Italy, 4794
 what does crossing the Rubicon mean? 2874, 5615
 Ruby, picture, 1301
 Rucker's Jumnos, beetle, in colour, 6336A
 Rudd, fish, in colour, facing 5197
 Rudder bar and cables, in aeroplane pilot's cockpit, 4692
 Rude, François, French sculptor, 4648
 Fisher-boy of Naples, sculpture, 4650
 Rueda, Lope de: see De Rueda
 Ruelli, Swiss heroes of, 4670
 Ruff, bird, 3876, 2641, 3875
 Ruffe, fish, characteristics, 4978
 picture, in colour, facing 5197
 Rug, how to make a wool rug, with pictures, 1491
 Rugby Football, how to play, with pictures, 4949
 Rugby School, arms, in colour, 4989
 Rugby wireless station, 2095
 Ruhmer, German scientist, television experiments of, 1476
 Ruhmkorff coil, in wireless, 978
 Ruhr, German, tributary of the Rhine which contains in its basin the coal-mining district of Westphalia, 4300, 4426
 R.A.F. attacks on reservoirs during Second World War, 1946
 Rule, Britannia! story of English patriotic song, 1262
 Rum, Barbados' production, 3556
 British Guiana's production, 3558
 Jamaica's export, 3554
 Rumania, country of eastern Europe, 5770
 buildings and scenes, 5782-83
 flags of kingdom, in colour, 6975
 people, 5773
 railway engine of, 3512
 salt mine at Slanic, 1543, 1544
 scenes, 5782
 map, general and political, 5786
 map, in colour, 7098
 Ruminants, cud-chewing family, 1397

Rum-pel-stilt-skin, story, 30
 picture, 26
 Rumsey, James, American engineer, a pioneer of the steamship, 3731
 Runeberg, Johan Ludvig, Finnish poet and writer of plays, 4942
 See also Poetry Index
 Running, why do we get out of breath when we want to run down hills? 6100
 Running stitch, how to do it, 2359
 used in smocking, with picture, 5067
 Runnymede, Magna Carta signed at, 836, 838
 Rupert, prince of the Palatinate, British general and admiral, 526, 521
 Ruppell's vulture, 3633
 Rural District, what it is, 4411
 Rural Parish, what it is, 4411
 Rurik, Viking adventurer who founded the Russian monarchy, 5893
 Ruritania, imaginary kingdom of two novels by Anthony Hope, 3712
 Ruschuk, Bulgarian port and fortress on the Danube, 5774
 Rush, not a grass, 2186
 Ruskin, John, English art and architectural critic and social reformer, 3215
 description of mosses, 3412
 influence on nineteenth-century architecture, 6605
 on wealth, 5018, 6376
 at chapel when a boy, 3219
 copying pictures of Giotto, 3215
 portraits, 4132
 Russell, George William, Irish poet, 4080
 Russell, Henry, English writer of songs, 1264, 1261
 Russell, William Clark, novelist, 1264
 Russia, Union of Socialist Soviet Republics; Russia through the Centuries, 5893
 Russia Today—the U.S.S.R., 6013
 Balkans freed from Turks, 4632
 Byzantine churches, 5742
 canals, 4867
 collective farms system, 6022
 education, 6021
 effect of First World War on Russia, 6013
 five-year-plans, 6022
 founding of trade with England, 4600
 gold production, 5858
 ill-treatment of conquered Poland, 5028
 Kremlin, Moscow, 6723
 literature, 4815
 Napoleon's invasion, 1457
 part in First World War, 1708
 part in Second World War, 1943, 1945, 5902
 religion in, 6020
 Ruthenia transferred, 4553
 sturgeon fishing, 4976
 territory annexed by Russia after Second World War, 6013
 Pictures of Russia
 Dnieper Dam, 6025
 flags of country, in colour, 6975
 industrial scenes, 6019
 Kremlin, at Moscow, 5903
 Kuznetsk, iron and steel works, 6019
 lumberjacks using electric saw, 5353
 people, 89, 6015
 pine trees in Maloma Forest, 5351
 railway engine, 3512
 salt-field scenes, 1542
 scenes and buildings, 6026, 6028-30
 tractor hauling sledge train of logs, 5355
 workers, 6019
 Maps of Russia
 animal life of Siberia, 5906-07
 general and political, 5908
 natural features, 5905
 in colour, 7091
 Siberia, in colour, 7094
 Sixteen Republics of the Union, 5904
 See also Siberia and U.S.S.R.
 Russian art, 3397
 Russian gossip, game, 1372
 Russian Soviet Federal Socialist Republic, biggest republic of U.S.S.R., 6016; map, 5904
 Russo-Japanese War, effect on Russia, 5898
 Rust, what it is, 560, 2542, 3332
 Rust (blight), of Fungus family, 3411

of wheat, 1578
 plants affected by, 1573
 Rustat, Toby, page in service of Stuarts, his benefactions, 3359
 Rustem, coming of, story, 902
 how he met his son, story, 5092
 Ruszczyk, Polish artist, 5023
 Ruth, story of Ruth and Naomi, 1617
 appealing to Naomi, 1619
 gleanings in field of Boaz, 1617, 1618
 meeting with Boaz, 1620
 Ruthenia, district of Czecho-Slovakia transferred to Russia, 4553
 Rutherford, Lord, British physical scientist, 6316
 work on splitting the atom, 4224
 writings by, 4335
 portrait, 6309
 Rutland, smallest English county, places in, 7163; road map, 7145
 Ruwenzori, African mountain range, 6742
 fabled as Mountains of the Moon, 3316
 Ruysdael, Jacob, Dutch landscape painter and etcher, 1423
 Mill on the Dyke, painting by, 1423
 Ruysdael, Solomon, Dutch painter, 1423
 Country Scene, painting by, 1427
 Ruyter, De: see De Ruyter
 Ryde, Isle of Wight, view, 1592
 Ryder, Albert, American painter, 3287
 Rye, picturesque Sussex town, once a Cinque Port; Mermaid Inn, 1594
 Rye (cereal), description, 1693
 picture, 1696
 Rye grass, use as fodder, 2188
 pictures, 582, 3307
 S
 Sa'adi, Persian poet, 5675
 Saar Valley, German coalfield, given back to Germany, 4428
 Saarnen, Elie, Finnish architect, 5154
 Saas Valley, Switzerland, bridge, 4673
 Sabatini, Rafael, British novelist, 3712
 Sabi, River, Birchenough Bridge, Southern Rhodesia, 1313
 Sabine Cape, its discovery, 6433
 Sabine Island, Greenland, westerly movement of, 3037
 Sabine Mount, Antarctic peak, 6550
 Sabines, mountain people of ancient Italy, 5860
 siege of Rome, 4520
 Sable, mammal, home and food, 792
 Sabva, town of Arabia, 6285
 Saccharin, produced from coal-tar, 4472
 chemical difference from sugar, 1678
 Sac-fish, of Globe-fish family, 5334
 Sachet, how to make a handkerchief sachet in quilting, with pictures, 4465
 Sachs, Hans, German Renaissance poet and writer of plays, 4698
 Sack: see wool weight, 7089
 Sackville, Thomas, English poet, 857
 Sackville-West, Victoria, English writer, 3830, 4084
 Sacramento, capital of California, U.S.A., State Capitol, 3805
 Sacred bone, which it is, 1569
 Sacred cross beetle, in colour, 6336
 Sacred fig tree: see Bo tree
 Sacrum: see Sacred bone
 Sacahuaman, fortress at Cuzco, 7020
 Sadd, Alfred, English missionary in the Gilbert Islands, 1144
 Sadducees, teaching of, 4340
 Sadova, battle of, decisive victory of the Prussians over the Austrians in 1866: see 4298
 Safad, town of north Palestine, 6269
 Safety first, rules of the road, 6837
 what does it mean? 561
 Safety glass, how it is made, 3886
 Safety lamp, Stephenson's invention for use in mines, 2754
 Safety match: see Match
 Safety valve, adopted by Papin, 2746
 picture of valves, 6352
 position on railway engine, 3947
 Saffron, meadow: see Meadow saffron
 Saga, Scandinavian literature developed from ancient sagas, 4937
 in Greek literature, 5179, 5180
 Sage, a wise man: Pythagoras thought the name immodest and changed it to philosopher, 1037

- Saggar**, fire-clay box in which china is placed when put in furnace, 302
- Saghalien**: see Sakhalin
- Sagittarius**, constellation, trifold nebula in, 3978
- Saguntum**, city of Spain (now Sagunto), siege of, 5411
- Sahara**, immense desert of northern Africa, 2126, 2370, 2998, 6742
- influence on Europe's climate, 2375
- camel in, 6741
- hills of sand in, 2371
- Saiga**, antelope, characteristics, 1400
- Saigon**, town of Indo-China, 6513
- Sailing**, learning to sail a boat, with pictures, 6055
- Sailing ship**, how the wind is used, 3277
- building decline, 3214
- how it sails against wind, 3278
- Sailor**, old customs observed by British sailors, 2540
- Captain Cook's successful career, 2380
- how a sailor ties his knots, 4463
- State laws protecting, 6265
- how does a sailor know his way in the middle of the ocean? 6842
- why does a sailor salute the quarter-deck? 2540
- puzzle of the laughing sailor, with picture, 4712, 4831
- Sain, Marius**, his sculpture, Child's Kisses, 5259
- Sainfoin**, use as fodder, 2188, 5268
- flower, in colour, 5395
- Saint**, for persons, as St. George, see under actual names
- Saint**, stories of the saints, 6809
- who are our patron saints? 2785
- St. Albans**, Roman Verulamium, ancient city in Hertfordshire, 2511, 5866, 5873, 6996
- arms of city, in colour, 4991
- remains of Roman theatre, 6992
- Roman mosaic pavement, 6991
- view of cathedral, 1834
- west front of cathedral, 5880
- St. Andrews**, port in Fifeshire, arms of city, in colour, 4991
- arms of university, in colour, 4989
- castle, 348
- St. Andrew's Cross**, origin, and use in flag of Scotland, 6789, 6961-62
- pictures of flag, in colour, 6965, 6963
- St. Augustine**, Florida, oldest house in United States at, 3689
- St. Bartholomew**, massacre of, 3922
- painting by Philip Calderon, 3921
- painting by Sir J. E. Millais, 3919
- St. Bartholomew**, lake of, Bavaria, 4423
- St. Bartholomew's Church**, Smithfield, architecture of, 5866
- St. Bartholomew's Hospital**, Martyr's Stone in wall, 4864
- St. Bernard dog**, work of rescue, 670
- picture of, 666
- St. Bernard Pass**, Roman highway over the Alps, 4668
- Napoleon crosses, 1454
- St. Catharine's College**, Cambridge, arms, in colour, 4988
- St. Cloud**, famous old French town near Paris, 6737
- St. Davids**, city of Pembrokeshire, cathedral, 1460
- St. Denis**, northern suburb of Paris, abbey church, 4173
- tomb of Louis XII, 4173
- Sainte-Beuve**, Charles Augustin, French poet and literary critic, 4458
- Sainte-Chapelle**, Paris, exterior, 6000
- interior and windows, 5987
- St. Edmund Hall**, Oxford, arms, in colour, 4988
- St. Elmo's Fire**, what is it? 4016
- St. Etienne**, town of France, 4170
- St. Gall**, Swiss cathedral city, 4668, 4677
- St. George's**, Grenada, view, 3555
- St. George's Chapel**, Windsor, 76
- St. George's Cross**, origin, and adoption in English flag, 6961-62
- flags, in colour, 6965, 6968
- St. Germain-en-Laye**, chateau, 6358
- view of exterior, 6356
- St. Ghislain**, Belgian town, 5646
- St. Goar**, Rhine town, 4422
- view, 4423
- St. Gothard Pass**, highway through the Alps between Switzerland and Italy, length of tunnel, 4674, 6595
- St. Helena**, British island in the South Atlantic, 3422, 3558
- discovery by Portuguese, 5398
- Napoleon's exile, 1458, 4048
- flag, in colour, 6968
- funeral of Napoleon, 1457
- Napoleon dictating memoirs, 1441
- Napoleon's burial-place, 3561
- St. Ives**, Cornish fishing port, Godrevy lighthouse, 347
- view of bay, 1712
- St. Ives**, Huntingdonshire, bridge, 1836
- St. James's Palace**, 6246
- St. John**, Antigua, harbour, 3562
- St. John**, New Brunswick, 2194
- St. John of Jerusalem**, Knights of, Malta defended against Turks, 3418
- St. John River**, New Brunswick, logs floating down, 5356
- St. John's**, capital of Newfoundland, 2326
- view of, 2331
- St. John's College**, Cambridge, 6235
- arms, in colour, 4988
- St. John's College**, Oxford, arms, in colour, 4988
- St. John's wort**, common, related to tutsan, 4782
- common, flower, in colour, 4907
- marsh, flower, 5891
- trailing, flower, in colour, 4286
- St. Just**, Antoine, French revolutionary, portrait, 647
- St. Keyne's Well**, legend, 1149
- St. Kitts**, Leeward Islands, 3554
- Brimstone Hill, 3555
- St. Lawrence River**, Canada, its exploration, 2380
- its course, 2192
- bridge at Quebec, 2317
- scene on the river, 2499
- ship passing through rapids, 2199
- Victoria Bridge, 555
- St. Lucia**, Windward Islands, 3555
- flag, in colour, 6967
- St. Malo**, seaport of Brittany, 6358
- St. Maries River**, Idaho, logs floating down, 5358
- St. Mark's**, cathedral, Venice, 5743
- bronze gates of Campanile, 6733
- finely decorated doorway, 5749
- general views, 274-6
- mosaic figures, 445, 447
- reliquary in, 6739
- 12th-century window, 5752
- view of exterior, 5747
- St. Martin de Boscherville**, near Rouen, church at, 5745
- St. Martin-in-the-Fields**, London church, 4234, 6473
- St. Martin's Cross**, on Iona Island, 725
- St. Mary-le-Strand**, London church, 6473
- St. Maurice River**, Canada, water-power station, 5608
- St. Michael's Mount**, Cornwall, 838, 1713
- St. Nazaire**, dry dock destroyed during Second World War, 1945
- St. Patrick's Cathedral**, Dublin, 3073
- St. Patrick's Cross**, origin, and adoption in Irish flag, 6961
- flag, in colour, 6965
- St. Paul de Loanda**: see Loanda
- St. Paul's Cathedral**, description, 6243
- Great Fire destroys old one, 1212, 4227
- Grinling Gibbon's carvings, 3859, 6732
- Inigo Jones's plans, 6241
- Watts's picture, Life, Death, and Judgment, 2546
- Whispering Gallery, 6062
- who built the cross on it? 5617
- why can we hear a whisper across the dome? 2172
- Pictures of St. Paul's Cathedral**
- chained Bible in olden times, 7055
- Chapier House remains, 4863
- cross, 5617
- Grinling Gibbons's woodwork, 6733
- interior seen from above, 4235
- nave and north aisle, 4235
- seen from Thames, 4231
- west front, 4231, 6239
- Whispering Gallery, 6061
- Wren gazing on his masterpiece, 4227
- Wren showing plan to Charles II, 4225
- Wren's model, 4863
- St. Paul's Church**, Covent Garden, London, 4228
- St. Paul's School**, story of foundation by Colet, 4958
- John Milton a pupil, 1231
- arms, in colour, 4989
- Dean Colet's statue, 4961
- foundation in time of Henry VIII, 1080
- St. Peter's**, Rome, and its architects, 6112, 6186
- cupola, 6120
- exterior, 6119; interior, 6122
- general view, 4909, 4921
- St. Petersburg**: see Leningrad
- St. Quentin**, French city, town hall, 6359
- Saint-Saens**, Charles Camille, French composer, 150
- St. Savin**, Romanesque wall paintings in church, 450
- Saintsbury**, Professor George, English writer, 3831
- St. Sophia**, Istanbul, 5742
- decorations in, 446, 448
- exterior view, 6139
- interior views, 5741
- St. Thomas's Hospital**, London, view of, 1216
- St. Vincent**, Lord: see Jervis, Sir John
- St. Vincent**, Windward Islands, 3555
- arms, in colour, 4985
- cotton factory, 3555
- flag, in colour, 6967
- St. Vincent**, battle of (1797), engagement between the British and Spanish fleets, Nelson boarding enemy ship, 1452
- Nelson receiving enemy's sword, 1456
- St. Vincent's Rocks**, legend, 1524
- Sakalava girls**, picture, 6745
- Sakhalin**, or Saghalien, Siberian island north of Japan, Japan gains half the island from Russia, 6620
- missionary work by a political prisoner, 5028
- Sakkara**, great cemeteries discovered by Mariette, 6860
- first stone house built at, 3165
- Pyramid of Unas, 6860
- tomb of architect of Pyramids, 5379
- Salad burnet**, fodder plant, 5267
- flower, in colour, 5395
- Saladin**, sultan of Egypt and Syria, 3268
- meeting with Richard I, 3267
- Salamanca**, city of Spain, 5278, 5410
- Plateresque style in buildings, 6372
- general view, 5284
- Salamanca**, characteristics, 4744
- the three-toed and the spotted, 4745
- Salamis**, battle of, sea fight which decided the fate of Greece and Europe in 480 B.C., 890, 3123, 6389
- Salammac**, in electric batteries, 483
- Salary**, derivation from word salt, 1540
- See also Wage
- Salazar**, Antonio de Oliviera, Portuguese statesman, 5400
- Sale of Goods Act**, 4774
- Salisbury**, Frank O., his paintings: Arthur Mee, facing page 1
- Jack Cornwell, 6192
- The Quest of St. George, 2785
- Salisbury**, Lord, English statesman (1830-1903), 4623
- on Englishman's sense of duty, 2352
- tribute paid to Gladstone, 2138
- his portrait, with parents, 4132
- Salisbury**, capital of Southern Rhodesia, 3812
- wireless station aerials, 2095
- Salisbury**, capital of Wiltshire, arms, in colour, 4991
- Salisbury Cathedral**, description, 5871
- tomb of Bishop Bridport, 5873
- Constable's painting, 2305
- exterior, 76, 5882
- nave, 5877
- Saliva**, how it is produced, 1932, 2428
- Sallow**: see Goat willow
- Sallow thorn**: see Sea buckthorn
- Sallust**, Roman historian, 5430, 5425
- Sally in Our Alley**, by H. Carey, 1265
- how song was inspired, 1263
- Salmon**, habits, 4980
- British Columbia's fisheries**, 2323

common in Ireland, 3068
 fight with eagle, 3629
 migration, 4975, 4979
 number of eggs, 4858
 swimming speed, 2042
 fish, in colour, facing 5197
 salmon leaping, 4981
Salmoneus, story of, 6930
Salmon trout, fish, in colour, facing, 5197
Salonika, or Salonica, port of Greek Macedonia, 5768
 base for Allies during First World War, 1709
 Serbia's southern trade outlet, 4533
 White Tower, 5777
Salpa, primitive sea squirt, 5346
Salt, Sir Titus, founder of alpaca wool industry, 1533
Salt, the story of common salt, 1539
 blood's salts explained 1062
 Cheshire and Droitwich beds, 1384
 earthenware glazed by salt thrown into ovens, 302
 electricity's action on, 483
 in animals' bodies, 328
 in milk, 2307
 necessary for life, 1540, 2183
 sea's amount, 642, 2125, 2495
 weight of a cubic foot, 7074

Wonder Questions

how does salt melt snow? 3649
 what makes the sea salt? 61
 where do plants get their salts? 4386
 why is salt damp before rain? 564

Pictures of Salt

covered with clay for protection, 1539
 crystals, under microscope, 1911
 how it is obtained, series, 1541-1548
 mineral, in colour, 1302
 pyramid in Cadiz, 5273
Saltaire, Yorkshire town created by alpaca wool industry, 1533
Salt Lake City, capital of Utah, U.S.A., monument to seagull, with picture, 5983
Salt marsh cavy, 1032
Salton Sea, California, picture, 2371
Saltpetre, sources of, 2375
Salts, nature of, 4347
Saltsjohaden, Sweden, concrete bridge near, 5160

Salts of iron, blood needs, 2183
 ink contains, 1416
 milk contains, 2183, 2309
Saltwort, flower of prickly saltwort, 5761
Saltykov, Michael, Russian satirical writer, 4817

Salute, why does a sailor salute the quarter-deck? 2540

Salvador, smallest, but most populous Central American Republic, 7003, 7008
 flag, in colour, 6975
 street scene, 7013
 map, general, 7030
 map, in colour, 7103

Salvage, rescue of property from destruction, diver's work, 6587-92

Salvation Army, William Booth (General Booth) founds, 5452

Salvator Rosa, Neapolitan painter, 936
 portrait of soldier, 3779
Salver, sixteenth-century silver, 6735
Salvini, Salvino, his statue of Giovanni Pisano, 5008

Salvisberg, O. R., Swiss architect, offices at Basle, designed by, 6616

Salzburg, Austrian city, 4549, 6372
 general view, 4558

Salzkammergut, Austrian district, 4549
 Samara, in botany, 6495

Samarang, Javanese port, 5532
Samaritan, Good, parable picture, 5188

Samas, Babylonian sun-god, 6800
Sambar, animal, home of, 1402

with baby, 1403

Sambre, Belgian river, 5645

Samia gloverl, of Rocky Mountains, caterpillar, in colour, 6210

Samnites, enemies of Rome, 5859

Samoa, Pacific group, map, in colour, 7106

Samos, Polycrates its tyrant ruler in 580 B.C., 1037

Pythagoras born there, 1037, 3119
Samothrace, island, Winged Victory found at Kaballa, 6987, 4275

Samovye dog, 667

Samphire, flower, 5761
 golden samphire, in colour, 5643

Samson, story of, 1487
 breaking cords that bound him, 1486

grinding corn in prison, 1489
 Philistines binding him with fetters of brass, 1489

puts forth a riddle, 1486
 revealing the secret of his great strength to Delilah, 1487

Samuel, prophet of Israel, story of, 1737
 dealings with Saul, 1857, 1860

Witch of Endor calls up his spirit, 1861
 at prayer, by Sir J. Reynolds, 1736

listening to the Elders, 1737
 receives the blessing of Eli, 1739

Saul's meeting with, 1859

Samuel, Marcus and Samuel, brothers who founded the Shell Company, 4107

Sanaa, capital of Yemen, 6285
San Blas, Mexican harbour, 7007

Sanchi Tope, building in India, 5634
Sand, in the Sahara, 2375

weight of a cubic foot, 7074
 why is a fire pail filled with sand? 4760

why is there sand on the east coast and shingle on the south? 4639

Sand, George, pen-name of Armandine Dupin, French novelist, 4458

Sandakan, former capital of British North Borneo, 3425

Sandburg, Edgar, American poet, 4205

Sandby, Paul, English landscape painter, 2420

Sand cercheris, insect, in colour, 5714
Sanderling, bird, 3875

Sand-fly, story, 4243, 6086

Sandford, Egbert: see Poetry Index

Sandgrouse, bird, speed of flight, 6852
Sand-hopper, shore animal, 5480, 5479

Sand ibis, bird, 3868

Sandilands, Sarah, Raeburn's benefactor, 5694

Sand lizard, 4492; in colour, facing 4469

Sand martin, nest, 3145
 bird, in colour, 2897

in his haunts, 3139

San Domingo: see Dominican Republic

San Domingo tody, bird, in colour, 3143

Sandor, Count, how he drove down-stairs, story, 4243

Sandpiper, bird, habits, 3876
 common sandpiper, in colour, 3021

on nest, 3875, migration route, 222-3
Sand rocket, flower, in colour, 5643

Sandstone, how it is formed, 4639
 composition of Old Red, 1133, 1136

in carboniferous system, 1257
 weight of a cubic foot, 7074

of Permian Age, 2006

Sand wasp, red-banded, 5843

Sandwich, ancient and picturesque Cinque port, Kent, view, 1594

Sandwich fern, in colour, 3022

Sandy pimplet anemone, in colour, 1556

San Fernando, Trinidad, native street, 3562

San Francisco, California, conference which approved United Nations Charter, 3800

Golden Gate Bridge, 551
 scenes, 3803-5

Sangallo, Antonio da, Italian architect, 6111

Sanhedrin, council of the Jews, 4702

Sanitary Commission, 5458

Sanitation, Israelites pioneers of, 544

San José, capital of Costa Rica, cathedral, 7013

Sankey, Ira David, American evangelist and writer of hymns, 1758

portrait, 1759

San Marco: see St. Mark's, Venice

San Marino, miniature Italian republic in the Apennines, 6858

flags, in colour, 6975

San Martin, José de, Argentine general, 7003

Sanmichele, Michele, Italian architect, one of the master builders of Venice, 272

Sannikof Island, Nansen's visit, 6438

San Salvador, Bahamas, Columbus discovers "West Indies," 3554

San Salvador, capital of Salvador, water cart in street, 7013

San Sebastian, Spanish port, 5278
 general view, 5282

Sanskrit, early Indian literature, 5674

Sansovino, Andrea, Italian sculptor, 4524

Sansovino, Jacopo, Florentine architect, 272, 4524, 6114

Sant, James, English artist, picture, Dick Whittington, 33

Santa Anna, Antonio, Mexican patriot 7004

Santa Claus, story, 6809

Santa Fé, city of Argentina, 7017

Santa Maria, Mexico, ancient tree, 6467

Santander, Spanish port, 5278

Santayana, George, American philosopher and writer, 4335

Santiago de Chile, capital of Chile, monument to de Valdivia, 6997

Santo Domingo: see Dominican Republic

Santos, Brazilian port, 7008
 picture, 7010

Santos-Dumont, Alberto, Brazilian pioneer airman, 21

Saône, tributary of the French Rhône, view near Lyons, 4054

Sao Paulo, city of Brazil, 7008

Saorstát Eirann: see Irish Free State

Sao Thomé, Portuguese West African island, 5402, 6752

Sap, in plants, 332

Saperda, sharp-pointed, beetle, in colour, 6335

Sapphire, mineral, in colour, 1301

Sappho, Greek lyric poet, 5181
 sculpture by Pradier, 4900

Saprophytes, what they are, 206

Saracenic architecture, growth, and description of, 5621

Saracens, former term for Mohammedans, their conquests, 6131

Crusades undertaken against, 3267

Saragossa, old Spanish city, once important as capital of Aragon, 5278, 6840

who was the Maid of Saragossa? 6840

cathedral and old stone bridge, 5281

Nuestra Señora del Pilar, 6363

Sarah, wife of Abraham, story, 622

Sarajevo, capital of Bosnia, Yugoslavia, 4556

where the First World War originated, 1705

street scene, 4563

Sarawak, British colony in Borneo, 3424

James Brooke, making treaty with Sultan of Borneo, 2083

flag, in colour, 6967

map, in colour, 7097

Sarcophagus, famous sarcophagus of the Weepers, 4395, 4402

Alexander the Great's tomb with sculptured scenes, 4402

figures on Etruscan, 4900

Roman, found in London, 722

Sarcosporidia, parasites that produce a poison, 6958

Sardanapalus, palace of, discovered by Hormuzd Rassam, 6870

Sardines, Portugal exports, 5402

Sardinia, Italian island in the western Mediterranean, 4793

Maps of Sardinia

animal life of the country, 4791

general and political, 4789

in colour, 7088

physical features, 4793

plant life, 4796

showing historical events, 4795

Sargasso Sea, western North Atlantic, 1068, 2496

crossed by Columbus, 1018

what is it? 3040

Sargent, Epes: see Poetry Index

Sargent, John Singer, English portrait painter of American descent, 2668, 3288

La Carmencita, painting by, 2672

Sargon, Assyrian king and conqueror, 6272, 6872

famous palace, 5377, 6870

winged bull from palace, 3900

Saros, meaning of, 817

- Sarsaparilla**, its use, 2689
Sarto, Andrea del: see Del Sarto
Sartor Resartus, book by Carlyle, 3216
Saskatchewan, prairie province of Canada, 2196
 arms, in colour, 4985
 flag, in colour, 6967
 harvesting oats in snow, 1697
 Parliament Buildings, Regina, 2330
Sassafras, used in medicine, 2680
Sassanian, dynasty, Persia, 6390
Sassoferato, his painting, Virgin and Child, 1663
Sassoon, Siegfried Lorraine, English writer and poet, 4083
Satellite, what it is, 2172
Satin stitch, how to sew, with picture, 2488
Satire, use and abuse of, 1610
Satisfaction, not found in success, 2852
 why are we never satisfied? 1918
Saturation, of air, 2885
 meaning in meteorology, 6721
Saturday, origin of name, with picture, 5224
Saturn, god of Greece and Rome, 3514
 festival in honour of, 5224
Saturn, planet, story of, 3354
 discoveries by Huygens, 3613
 distance from Earth, 2990
 distance from Sun, 3118, 3354
 facts and figures, 7061
 from one of its moons, 3357
 path round Sun, 15, 17
 with its rings, 3355, 3356
Saturnalia, Roman festival, 3514
Satyr, Greek gods, 3530
Saubia ant, habits, home, and food, 5964
 carrying leaves, 5965
 winged and worker species, 5967
Sauce, how to make, with picture, 1369
Saud, Abdul Aziz al, king of the Hejaz, 6264
Saudi Arabia, Arab kingdom, 6262
 flag, in colour, 6975
 scenes, 6276
 See also Arabia
Saul, king of Israel, story of, 1857
 chosen by the people, 1740
 Pictures of Saul
 among the prophets, 1858
 David plays harp to, 1861
 discovered sleeping by David, 1857
 meeting with amalek, 1859
 puts his armour on David, 1987
Saul of Tarsus: see Paul, St.
Saunders, Dr. Charles, Marquis wheat produced by, 1326
 with first grains of Marquis wheat, 1324
Saunier, Madeleine, her good deeds, 5958
Savage, instinct of prayer, 3097
 sense of beauty, 795
 teeth rarely decay, and why, 1930
Savaii, Matavanu volcano, 2249
Savannah, first steamship to cross Atlantic, 3738
 picture, 3735
Savannahs, prairies of N. America, 2127
Savery, Thomas, English engineer, the partner of Thomas Newcomen, 2746
 steam-engine invention, 3208
Savery, William, Quaker preacher, 3980
Saville Theatre, Shaftesbury Avenue, London, 6615
Saving, what it means, and its necessity, 5140, 5757
 See also Money
Savin-leaved club-moss, 3408
Savonarola, Girolamo, Italian Dominican monk, religious and political reformer of Florence, 1389, 4794
 his painter followers, 4729, 6678
 burning of vanities in Florence, 1388
Savonlinna, Finland, Nolofsborg Castle, 5169
Savoy, Alpine district of France, 4787
Savoy cabbage, evolved from wild variety, 2436
 picture, 2437
Savoy Chapel, architecture, 5874
Savoy Hotel, London, terracotta building, 4230
Saw, what is the notch at the top of a big saw for? 4136
Saw-fish, size and strength, 5230
 Japanese, 5231
Saw-fly, tree and grain pest, 5844
 different species, 5839, 5843
 saw, under microscope, 1914
 varieties, in colour, 5714
Saw-wort, of Composite family, 5265
 flower, in colour, 5395
Saxe, John Godfrey: see Poetry Index
Saxifrage, of Parsley family, 2436
 members of family, 5519, 5892
 varieties, 5521; in colour, 4418, 4420, 6127
 See also Golden saxifrage
Saxin, coal-tar product, 4472
Saxons, settlements in Britain, 592, 6993
 architecture, 5865
 Charlemagne's conquest of, 2524
 Hallelujah battle, 2644
 white horse, emblem of, 6961
 architecture and ornaments, 725
 arrive at gates of London, 2643
 pictures from a Saxon Psalter, 1925
 Saxon walks on the Road of Time, 721
 See also Anglo-Saxon
Saxony, German State, coalfields, 4427
 map, in colour, 7087
Sayan Mountains, range between Mongolia and Siberia, 6500
Sayce, Archibald Henry, work on Hittite civilisation, 6871
Scabbard, Roman bronze-plated, 723
Scabbard-fish, 5233
Scabious, cultivated, 6378
 devil's-bit, in colour, 5141
 field scabious, in colour, 4664
 flowers of family, 5021, 5761
Scad, fish, in colour, 5100
Scaffell, mountain: see Scawfell
Scald, how to treat, 6178
Scald-fish, life-story, 5105
 in colour, 5099
Scale-insect, habits, 5722
 specimens of, 5721
Scale-moss, pear-shaped, 3408
Scales, in music, 6306
Scale-tail, characteristics, 1030
Scallop, characteristics, 6582
 picture of shell, 6577
 specimens of shells, in colour, 1177
Scalp, human, through microscope, 1913
Scaly coral-weed, 3413
Scaly spleenwort, in colour, 1800
Scalyswing, grey, in colour, 5713
Scandinavia, general description, 5145
 maps and pictures: see Norway, Sweden, and Denmark
Scandinavian literature, history of, 4937
Scandinavians, typical group of the Nordic type of the white race, 5146
 See also Vikings
Scanning disc, used in television, 2344
Scantlebury, Elizabeth: see Poetry Index
Scaphidomorphus, five-spot, beetle, in colour, 6336A
Scar, on human body, results of, 1434
Scarab, sacred beetle of Egyptians, 6332
Scarborough, seaside resort and spa in the North Riding of Yorkshire, 343
 castle ruins, 964
 harbour, 348
 view of sands, 1836
Scarf, how to knit one, with picture, 3106
Scarlet bug, in colour, 5714
Scarlet dasya, seaweed, in colour, 3416
Scarlet hopper, insect, in colour, 5714
Scarlet ibis, bird, in colour, 3264
Scarlet pimpernel, what it is like, 4543
 flower, in colour, 4664
Scarlet runner, plant, 2439
Scarlet tanager, bird, in colour, 3143
Scarlet tiger moth, and caterpillar, in colour, facing 5935
Scawfell, mountain of Cumberland, quotation by Wordsworth, 466
 view, 473
Scenery, how to make for model railway, 6796
Scentless mayweed, or Corn feverfew, member of Composite family, 4414
 what it is like, 4542
Septicism, meaning of, 3036
Socrates, his creative scepticism, 1164
Schaffer, priest, first maker of wood-paper, 1294
Schaffhausen, Rhine falls at, 4686
Scheele, Carl Wilhelm, Swedish chemist, gas oxygen discovery, 6312
Scheffer, Ary, his painting, St. Augustine and St. Monica, 3535
Schelde, river of France and Belgium, 5646
Scherrer, Jacques, his painting, Composition of Marseillaise, 4049
Schiaparelli, Giovanni, Italian astronomer, 3616; portrait, 3611
Schiller, Johann Christoph Friedrich von, one of the greatest of German poets and playwrights, 4698; portrait, 4695
 See also Poetry Index
Schipperke, dog, related to wolf, 669
Schist, rock contorted by pressure, 2004
Schliemann, Heinrich, German archaeologist, excavations and discoveries, 4023, 6935
Schmalz, Herbert, his painting, By the Waters of Babylon, 2231
Schoeffer, Peter, early German printer, 1514
Schomburgk, Sir Robert, Anglo-German traveller, Victoria regia lily described, 3056
Schongauer, Martin, German painter and engraver, 1188
 portrait by Hans Burgkmair, 1186
Schoolhouse, where is the oldest schoolhouse in the world? 5735
School lessons: for complete list of school lessons see Art, French, Music, Number, Reading, Writing
Schools, history of formation and the men who gave them to us, 4955
 who started Sunday Schools? 5983
 arms of Public Schools, in colour, 4989
 in early days, 4959
 modern, 6253
 schoolroom scene, 6099
Schopenhauer, Arthur, German poet and philosopher, 4693
Schorl rock, 2007
Schottstein, Austria, general view, 4559
Schrader, Julius, his picture, Queen Elizabeth signs death warrant of Mary Queen of Scots, 1080
Schreiner, Olive, South African novelist, 4336; portrait, 4331
Schubert, Franz, Austrian composer, 147; portrait, 145
Schumann, Robert, German composer, 148, 145
Schuschnigg, Dr., Austrian chancellor, 4549
Sciaena, fish, in colour, 5097
Science, explorers of matter, 6309
 discoveries of medical science, 2623
 analytical method, 986
 Aristotle's, 1288, 3760
 development in Renaissance period, 3760
 Earth is man's servant, 6547
 religion and science, 1586
 Thale's discoveries, 672
Silly Islands, group of islands lying about 25 miles from Land's End, Cornwall, 5618
 places in, 7155
 map, 7119
 Peninnis Point, 2129
Scipio, Publius Cornelius Major, surnamed Africanus, Roman general, 4352, 6806, 4351
Scissors, picture-story of manufacture, 2914
Scones, how to make, 752
Scopas, Greek sculptor and architect, 4272, 4277
Scoresby, William, English Arctic explorer, 4604
Scorpion, habits, 5591
 British false scorpion, 5599
 British water scorpion, 5719
 Central African, 5599
 in Silurian Age, 1009
 specimens under microscope, 1915
 water scorpion, in colour, 5714
Scorpion-grass, forget-me-not's old time name, 5592
 not a grass, 2186
Scorpion Shell, 1178
Scotch argus butterfly, with egg, caterpillar, and chrysalis, in colour, 6205
Scotch rose: see Burnet rose

Scoter, bird, in colour, 3024
Scotland, northern country of Great Britain, 216
 arms added to English, 4984
Black Death in Scotland, 3837
 English kings as overlords, 718, 3270
 flag, and why it was adopted, 6961-62
 geological history, 518, 1136, 1257, 1880
 printing press first set up, 1517
 reasons for heavy rainfall, 6720
 roads and bridges, 2157, 2158
 seen from the sea, 341
 Union with England, 1205, 1214, 6961-62
 wars with Edward I, 952
 flags, in colour, 6965, 6968
 scenes, 348-49, 1335-38: see also names
 of places, as Edinburgh
 water power, 5609
 wild cats, 422

Maps of Scotland

general, in colour, 7082
 historical events, 600-601
 natural features, 726
 physical features, in colour, 7080

See also British Isles

Scotland Yard: see New Scotland Yard
Scots, the inhabitants of Scotland, 769
 invade England, 591
 oatmeal as national food, 1697, 2430
Scots pine, or fir, what it is like, 3789
 turpentine obtained from, 2937
 cones, in colour, 3671
 life-story, 5005
 picture of tree, 2941
 tree, leaves, and cones, 3915

Scott, Duncan Campbell, Canadian poet, 4205

Scott, Elisabeth Whitworth, British architect, Shakespeare Memorial Theatre, designed by, 6615

Scott, Sir Gilbert (1811-1878), English architect, 4230
 designed St. Mary's Cathedral, Edinburgh, 6472

Scott, Sir Giles Gilbert, architect of Liverpool Cathedral, 5871, 6611
 Waterloo Bridge, designed by, 6613
Scott, Hugh Stowell, known as Henry Seton Merriman, English novelist, 3712

Scott, Lady John, wrote revised version of Annie Laurie, 1265

Scott, M. H. Baillie, early twentieth century architect, 6610

Scott, Captain Robert Falcon, English Antarctic explorer, 6552, 6558, 6549
 attacked by grampuses, 2150
 last letter to Barrie quoted, 372
 scenes in Antarctic, 6548, 6553, 6555, 6557

statue in London, 1222, 6555
Scott, Sir Walter, Scottish novelist and poet, author of Waverley Novels, 2009
 Hogg's assistance to him, 3954
 novels and their writing, 2719
 poetry described, 2595

Raeburn's paintings, 5696
 source of Heart of Midlothian, 5334
 See also Poetry Index

Pictures of Scott

finding lost manuscript of his novel Waverley, 2008
 monument in Edinburgh, 1338
 portraits, 2009, 2595; with parents, 4132
 reading by his fireside, 2008
 scenes from novels, 2719, 2720, 2721
Scottish hare, 1036
Scottish National Portrait Gallery, designed by Sir R. Anderson, 6472
Scottish Region, British Railways group, 3950

Scraellings, Viking name for American natives, 1016

Screamer, bird, characteristics, 3758
 family of crested screamers, 3755

Screw, what to do with nails and screws, 253

Screw-propeller, invention and adoption in ships, 3574, 3738

three blade, 6352/
Screw shell, 6581

Scrubber, in making gas, 3335
 diagram, 3452

Sculpture, beginnings of, 3891
 Christianity's influence, 4406
 English and its characteristics, 4765

Europe's greatest period, 4643
 French sculpture, 4644
 Greek, styles and sculptors, 4023, 4137, 4269, 4395
 Italian sculpture, 4521
 modern sculptors, 4895
 world's greatest periods, 4521

Pictures of Sculpture

ancient and modern, 4897-4900, 5007-14, 5129-36, 5253-60
 Assyrian and Babylonian, 3898-3900
 Egyptian, 3893-97
 Gothic examples, 4405
 Greek and Roman, 4395-4402
 Greek series, 4023-32, 4137, 4139, 4141, 4145-8, 4269-76
 Italy's Golden Age, 4525-32
 little gallery of, 4649-56

See also names of countries, sculptures, and sculptors

Scurvy, Captain Cook's precaution against, 2380

Scurvy grass, what it is like, 5520

plant in flower, 5521

Scutari, city of Asia Minor, now included in Istanbul, Florence Nightingale's work at, 3984

Scutcher, machine used in cotton manufacture, 174

Scyld, Viking hero, 3028

Scylla, monster and rock, 3529, 6104

story in the Odyssey, 5306

Scythia, supposed original home of the Picts, 769

Scythians, ancient people, 6802

Sea, story of the sea, 2495

animal life, 325, 452, 4855

area compared with that of the land, 2125, 2495, 7059

areas and depths of the oceans, 7059

areas of the biggest seas, 7059

fishes of the deep sea, 5227

force and height of waves, 2498

how it became salt, story, 5091

oxygen carried to depths, 326

plant life, 86, 1066

prehistoric seas, 1136

salt, origin and amount, 642, 1539, 2125, 2495

sounding the depths, 2413

volcanic action in Tertiary Period, 1753

wave motions explained, 6179

Wonder Questions

can fresh water be found in it? 4638

does the Moon pull the sea? 4637

how deep is the sea? 2413

how do we know what is at the bottom of the sea? 3037

how much water is there in it? 560

is there colour in the sea? 184

is there gold in the sea? 5614

is the sea ever still? 5123

is the stuff in earth and air and sea

always changing places? 6725

what is the blue light on the sea at night? 4520

what makes a current in the sea? 5250

what makes the sea roar? 1050

what makes the sea salt? 61

why are so many people always ill at sea? 5002

why does the moon look so big when low

down over the sea? 5246

why does the sea change colour? 4762

why does the sea never get bigger? 6355

why does the sea not freeze? 1048

Pictures of the Sea

effect of moon, 4637

mirage at sea, 441

waves that shape the coasts, 2132, 2413

See also Ocean

Sea-anemone, characteristics, habits, and food, 1552, 6700

hermit crab's alliance, 5474

can it eat a bigger creature? 1552

how long does a sea-anemone live? 1552

British and foreign, in colour, 1553-56

life with crab, 5475

different specimens, 6695, 6697

under microscope, 1915

Sea aster, of Composite family, 3759

picture of flower, 5761

Sea-bear, fur sought after, 906

Sea-beet, plant, 5762

Sea-blades, characteristics, 3995

Sea-blite, picture of flower, 5761

Sea-bream, in colour, 5099

Sea buckthorn, or sawallow thorn, 5763

flower, 5761

fruit, in colour, 3667

Sea campion, of Pink family, 5760

seaside, flower, in colour, 5644

Sea convolvulus, what it is like, 5763

flower, in colour, 5644

Sea-cow, 2145, 2147

Sea-cucumber, characteristics, 6702

picture, 6697

plates from, under microscope, 1914

Sea-eagle, characteristics, 3629

various species, 3627, 3633-4, 3636

Sea-elephant: see Elephant-seal

Sea endive, seaweed, 3416

Sea fan, 6697

Seaford, Sussex, view of the cliff, 1591

Sea-grass, and its uses, 1063

Sea-gull, is there a monument to? 5983

See also Gull

Sea-heath, flower, in colour, 5643

Sea-holly, belongs to Parsley family, 2436, 5762

flower and leaf, 5761

Sea-horse, characteristics, 5104; in colour, 5100

Seakale, what it is like, 5763

how it is grown, 2434

flower, in colour, 5644

Seal, species and habits, 905

route of migration, 222

various species, 905, 909, 911

Sea lavender, different kinds, 5761

pictures in colour, 5644, 5761

Sea-lily, animal like a plant, 37

Sealing-wax, lac insect helps to make it, 5722

making an initial brooch in, with picture, 4342

Sea-lion, species and habits, 906, 912

various specimens, 907, 909

Sea-lizard, origin, 11

food and home, 4495

Sealyme grass, 3310

Sea mammals, characteristics, 905

Sea-milkwort, description, 5763

flower, 5761

Sea mouse, marine worm, 6827

Sea-oak, podded, seaweed, 3415

Sea-otter, fur of, 793

picture, 789

Sea-parrot: see Puffin

Sea-pen, sea creature, 6697

Sea-pink: see Thrift

Sea plainain, description, 5764

Seaplane: see Aeroplane

Sea purslane, name of two different plants, 5760

flower, in colour, 5643

Sea radish, what it is like, 5763

flower, in colour, 5643

Searchlights, 1100

radar antennae on, 2463

Sea-reed, common, or marram, 3308

Sea rocket, flower, in colour, 5643

Sears, Edmund H.: see Poetry Index

Sea-scorpions, origin on Earth, 10

of Silurian Age, 1009

Seasickness, causes of, 5002

Seaside, flowers of the seaside, 5759

flowers, 5759, 5761; in colour, 5643-44

Seaside cottonweed, what it is like, 5760

flower, in colour, 5644

Seaside everlasting pea, 5762

Seaside smooth gromwell, flower, in colour, 5643

Sea slug, mollusc, 6585

Sea snakes, characteristics, 4620

Seasons, cause and effects, 16, 2741

temperature, affected by land and water, 2742, 2744

Sea-spleenwort, fern, in colour, 1799

Sea-squirt, life-story, 5345

Sea-starwort: see Sea-aster

Sea stock, great, flower, in colour, 5644

Seathwaite, Cumberland, wettest place in England, 5894

Seaton Delaval, Northumberland, mansion designed by Sir John Vanbrugh, 6469, 6475

Sea-trout, found in Irish estuaries, 3068

Seats, how to sit down without seats, 627

Sea-urchin, characteristics, 6702

common, 6695

long-spined, 6697

under microscope, 1915

Sea water, contents of, 2495
 specific gravity, 4954
 Seaweed, story of, 701, 3409
 Antarctic, 5980
 giant specimens, 702, 3052
 how it grows, 1066
 how to make a collection, 3227
 Sargasso Sea's seaweed, 2496, 3040
 uses of, 457, 1439, 3410
 how does it tell the weather? 4020
 is the knob on the seaweed filled with air? 1801
 why is seaweed put on the land? 4642

Pictures of Seaweed

British, series in colour, 3413-16
 edible seaweed, 3413
 giant, 700
 life story of bladderwrack, 703
 varieties, 201

See also specific names

Sea-whistles, seaweed, 3415
 Sea-workers, skeletons of tiny creatures, under microscope, 1914

Sea wormwood, uses, 5760
 flower, in colour, 5644
 Sebald, St., Vischer's shrine at Nuremberg, 4644
 picture, 4645

Sebastian, character in Shakespeare's Tempest, 6296

Sebastian, in Shakespeare's Twelfth Night, 6049

Second, unit of time agreed to by all the civilised world, 4833

Secondary Period : see Mesozoic Era
 Second World War : see World War, Second

Secret, how to keep one in writing, 383
 Secretariat, of Uno, its work, 6479

Secretary-bird, 3682 ; picture, 3634

Secret of the Fern Blossom, story, 6684

Secret societies, formed in Italy, 896

Section of circle, how to find area, 7075

Security Council, of the United Nations, 6478, 6479, 6482

Sedan, French town on the Meuse, 4048, 4299

Sedge, bogland members of Sedge family, 5892

how grass and sedges differ, 2186, 3306, 6012

stream members of family, 6012
 cyprus-like, spiked seeds, 946

marsh, flower, 6007

See also different species of Sedge

Sedge warbler, bird, in colour, 2767

in nest, 3139

Sedum, flower, 6384

Seed, the life-story of, 330, 331, 945

classification of seed-bearing plants, 6490

direction of growth, 580

energy in a tiny seed, 1616

large number of seeds produced by plants, 1065

number to a pound in various plants, 7070

time of cropping reduced by Russian process, 6023

use as food, 2431

Wonder Questions

does a seed breathe? 5862

how does a flower come from a little seed? 6355

how does the seed make the plant's colours? 2921

how many seeds come from one plant? 6228

will a seed grow after thousands of years? 4020

Pictures of Seeds

different forms of seed vessel, 6495

dispersal of seed, 945-949

various kinds, 333, 334

Seeger, Alan, American poet, 4205

Seley, Sir John Robert, English historian, 3828

See-saw, how to make, with picture, 1821

Seetzen, Ulric Jasper, German explorer, the first to explore Palestine, 6987

Seger, Ernst, his sculpture, Tears, 5255

Segesta, Sicily, Greek temple, 5510

Segment of Circle, how to find area, 7075

Segovia, old city of Spain, 5278

Alcazar, 5280
 El Puente, Roman aqueduct, 5280
 market place, 5281
 Séguin, Marc, French discoverer of water-tube boiler, 5373
 Seguin, Pierre, French sculptor, 4648
 Seine, French river, meaning of name, 4169

painting by H. D. Martin, 3285
 Seismometer, or seismograph, how it works, with picture, 5125

Sejm, Polish parliament, 5029
 Sekhet, Egyptian goddess, 3895

Selangor, central Federated Malay State, 3423

flag, in colour, 6967
 Government Buildings at Kuala Lumpur, 3423

Selby, site of Babylon surveyed by, 6868
 Selene, mythological Greek goddess of the Moon, 3516, 3518

Selenium, what it is, 107, 6842
 Seleucus I, Macedonian general who founded the Seleucid dynasty in Babylonia, 6390

Self-heal, flower, 4418
 Self-sacrifice, chief mark of man's divinity, 1854

Seljouk, Turkish tribe, 6131
 Selkirk, Alexander, the supposed Robinson Crusoe of Defoe, 1482, 2380

Selvas, almost impenetrable and often flooded forests of the Amazon, 2127

Selwyn, Bishop George, English missionary to the Maoris, 1140, 1137

Selwyn College, Cambridge, arms, in colour, 4988

Semaphore : see Signalling
 Semi-circular canals, what they are and their use, 3406

sea-sickness connected with, 5002
 Sempach, battle of, fought in 1386 between the Swiss and the Austrians, 4672, 4677

Seneca, Lucius, Roman philosophical writer, 1786, 5427, 5431

portrait, 1667

Senegal, French West African possession, 6749

mother and child, 6748
 native village, 6764

Senegal kingfisher, bird, in colour, 3264
 Senile slender-horn, in colour, 5713

Senlac, battle of : see Hastings, battle of
 Senlis, French town, cathedral architecture, 5983, 6001

Senna, what it is, 2689
 plant, in colour, 2687

Sennacherib, Assyrian king who besieged Jerusalem in the reign of Hezekiah, 2978, 6273

army destroyed by angel of God, 2979
 palace discovered at Kouyunjik, 6870

cylinder of, 6864
 palace of Nineveh, 5375

Sens, French city, Dauphin's tomb in cathedral, 4645

Sense, chemical senses have become less important, 3903

everything is known to us through our senses, 4033

five not the correct number, 1434
 inner and outer senses, 3297

Sense and Sensibility, novel by Jane Austen, published in 1811, 2350

Sensitive plant, leaves fold up, 585
 with leaves closed and open, 579

Sensory nerve, what it is, 5984
 Sentinel Rock, California, 3808

Seoul, Korean capital, 6624
 entrance to palace, 6630

grounds of old Imperial Palace, 6630
 old gateway and modern arch, 6630

street of wooden houses, 6630
 Sepal, of flowers, what it is and does, 332, 331

Sepia, cuttle-fish yield colour, 5232
 Sepidium, solid heart-shaped, beetle, in colour, 6336A

Septarian, in geology, nodule of clay with lime-filled cracks, 2005

September, month, origin of name, 5341
 picture, 5339

September Massacres, The, executions in French Revolution, 652

Sequoia, giant Californian tree named after Sequoia, the Cherokee, 5460

age they live to, 2370, 3052
 oldest tree in world, 6467

where it grows, 3052
 fallen sequoia tree, 3057

Sequoia, Cherokee Indian scholar who gave an alphabet to his people, 5459
 works out Cherokee alphabet, 5461

Serajevo : see Sarajevo
 Serapeum, ruins at Memphis, 6865

Serbia, formerly a separate State, but now part of Yugoslavia, 4555
 becomes part of Yugoslavia, 1710

part in First World War, 4556
 rallying point of Yugoslav races, 4533

Russia obtains self-government for Serbia, 5896
 stories of Serbia : see Stories

See also Yugoslavia
 Serbs : see Yugoslavs

Serin, what it is, 6721
 Sers, millions freed in Russia, 5896

Seriema, bird, characteristics, habits, and home, 3873

Serin finch, home of, 2902
 Serlio, Sebastian, Italian architect, work at Fontainebleau, 6360

Sermon on the Mount, wisest words heard on Earth, 4943

Serowe, capital of Bechuanaland Protectorate, 3312

Serpentine, mineral, 1302
 Serpentine shell, 6581

Serpent nowed, heraldic charge, 4986
 Serra da Espella, mountain range of Spain and Portugal, 5270

Serrated wrack, seaweed, 3416
 Serval, wild cat, West African, 424

Servant Bible, what it is, 5734
 Service, Robert William, Canadian poet and novelist, 4205

Service-tree, what it is like, 4033
 fruit, in colour, 3672

tree, flowers and leaves, 4154
 Sesame and Lilies, by Ruskin, 3220

Sessile-fruited oak, what it is like, 5185
 Set, ancient Egyptian god, 316, 426

Seti I, king of Egypt, mummy discovered at Der-el-Bahari, 6860

coffin, 4862 ; sculpture, 3894
 Seti II, king of Egypt, sculpture, 3894

Seton, Ernest Thompson, Canadian writer and naturalist, 4332

Setter, breed of spaniel, 670, 666
 Settignano, Desiderio da : see Da Settignano

Settlements, The Book of, by Ari Thorgrilsson, 4938

Setubal, Portuguese port, 5402
 street scene, 5414

Seurat, Georges P., French painter, 3042
 Sevastopol : see Sebastopol

Seven Ages of Man, in Shakespeare's sketch, 984

Seven Hills, what are the Seven Hills of Rome? 6355

Seven Sisters, cliffs near Seaford, Sussex, 209

Seven Stones Lightship, relief boat approaching, 3167

Seven Wise Men of Greece, who were they? 6348

Seven Wonders of the World, 4885-88
 Severn, river of England and Wales, estuary tides, 5617

Severn Tunnel, length and age of, 6595
 Severus, Septimius, one of the greatest Roman emperors, 2581

triumphal arch at Rome, 5503, 5512
 portrait, 2879

Seville, city of Andalusia, Spain, 5278
 architectural beauties of cathedral, 5994

Casa de Ayuntamiento, 6372
 Murillo's life there, 6680

school of painting greatly influenced by Ribera, 1308

tower built by the Moors, 5622
 Velasquez's life there, 6679

Alcazar, exterior, 5281

cathedral, 5987, 6002

Giralda Tower, 5625

Pilate's House, courtyard, 5632

River Guadalquivir at, 5284

Sevres, French town with a famous porcelain industry, 4170, 6737

porcelain clock, 6734

porcelain vase, 6735

Sewen, fish, in colour, facing 5197

Sewer, junction in Berlin sewers, 4384
Sewing-machine, early inventors, 5946
Sexton beetle : see Burying beetle
Seychelles Islands, group of British islands in the Indian Ocean, 3421
flag, in colour, 6967
giant tortoise, 3434
harbour at Victoria, 3435
Seymour, Jane, third wife of Henry VIII, 1076
Seymour family, arms, in colour, 4987
Sforza, Lodovico, duke of Milan, and patron of Leonardo da Vinci, 688, 6188
 portrait by Leonardo da Vinci, 694
 see Leonardo da Vinci's model flying-machine, 6187
Shackle, swivel, 6352
Shackleton, Sir Ernest Henry, British Antarctic explorer, 6554
 adventures with grampus whales, 2150
 his Antarctic expeditions, 6560
 seals that saved Elephant Island party 911
 shipwrecked in the Weddell Sea, 3558
 portrait, 6549
 scenes in Antarctic, 6548
Shad, fish, characteristics, 5102
 allis shad, in colour, facing 5197
Shaddock, fruit, 1814
Shadoff, what it is, 5970
Shadow, can a man have two ? 5738
 made by the hands, game, 126
 why are they longer at end of day ? 1794
Shadow theatre, how to make, with picture, 869
Shadrach, story in Bible, 3101
 in fiery furnace with companions, 3100
Shadwell, Thomas, English poet and writer of plays, 1810
Shaftesbury, Earl of, English social reformer, 5458
 portrait, 4132
 watches pauper's funeral, 5457
Shaftesbury Society, Lord Shaftesbury's work continued by, 5458
Shag : see Cormorant
Shaggy cap, edible fungus, 3411
Shagreen, untanned leather, obtained from dog-fish, 5227
Shagreen ray, fish, in colour, 5097
Shah Jehan, Mogul emperor of India and builder of the Taj Mahal at Agra, 2944, 5627
Shakespeare, John, William Shakespeare's father, 4473, 4476
Shakespeare, William, English poet and writer of plays, 4473
 poetic works, 857, 979, 1101
 comedies, 6039
 tragedies, 6181
 belief in witches, 1107
 epitaph in Stratford parish church, 4478
 heartsease described, 4544
 historical plays, 980, 1101, 6289
 love of England, 981
 Milton's tribute to him, 1231
 mountain thyme described, 5520
 number of lines spoken by his characters, 6849
 number of words used by him, 61, 5251
 on inspiration, 3957
 pea-shooter used by, 4040
 poaching story, 2629
 Roman plays based on Plutarch, 1101
 spirit of his time in his work, 857
 stages of life described, 336
 stories from a Shakespeare book, 156
 wise sayings from Shakespeare, 6536

Pictures of Shakespeare

at school, 4481
 before Sir Thomas Lucy, 4473
 Ben Jonson and Shakespeare at Mermaid Tavern, 859
 bust over tomb, 4477
 church where buried, 6413
 going to school, 4481
 holding horses in London, 983
 house at Stratford-on-Avon, 4477
 illustrations to his works, 981, 1101-1106, 3657, 6045, 6163, 6167
 Milton sees him pass, 1233
 portraits, 109, 1077
 reading a play to Queen Elizabeth, 979
 reading to Anne Hathaway, frontis., Volume 1

room where born, 4477
 schoolroom, 4477
 statue to his memory, 4477
 title page of first edition, 4859
 walking in woods, 4480
 with great men of his time, 857
 with some of his immortal characters, 7198

See also names of Plays and Poetry Index

Shakespeare Memorial Theatre, Stratford-on-Avon, 6615
Shale, in carboniferous system, 1257
 oil crushed from shale by Earth's movements, 2962
 weight of a cubic foot, 7074
 slaggy lava resting on shelf of shale, 2005
Shalmaneser I, Assyrian king, scene from bands on palace gates, 3899
 scene from Black Obelisk, 3899
Shalmaneser II, palace and relics of, discovered by Layard, 6870
Shama, Indian nightingale, 3017
Sham Immortal, The, story, 6930
Shamra, Syria, archaeological discoveries, 6871
Shamrock, used by St. Patrick as symbol of Trinity, 2785
Shandaken Tunnel, U.S.A., longest in the world, 6595
Shanghai, Chinese port, 6502, 6509
 General Post Office, 6498
 Loong Wah Pagoda, near, 5635
 Lung Hua Pagoda, 6505
 scenes in, 6501, 6507, 6515
Shanks, American who tried squaring the circle, 4265
Shanks, Edward Buxton, English poet and writer, 4084

See also Poetry Index

Shannon, Sir James J., British portrait painter of American birth, 2678
 Fairy Tales, painting by, 3655
 Reverie, painting by, 2676
Shannon, largest river of Ireland and the British Isles ; airport at Foynes, 3068
 electric power scheme, 3067
 aerial view of dam, 3069
 at Athlone, 3070
 at Limerick, 3072
Shansi, Chinese province, 6502
 archaeological discoveries in, 6998
Shantung, Chinese province, 6500, 6502
Shaoyang, Chinese town, main street, 6498
Shaphat, father of Elisha, 2606
Shapo : see Urial
Sharatz the Wonderful Horse, story, 4610
Shark, fish, description of family, 5227
 development of, 1136
 in Carboniferous Age, 1257
 leather made from its skin, 3153
 partnership with pilot-fish, 4857
 seal's enemy, 911
 blue, and fox, in colour, 5100
 pictures of sharks, 5227-33
Shark's Bay, Australia, named by Dampier, 2380
Sharp, Abraham, mathematician, squaring the circle, 4265
Sharp, Granville, English anti-slavery leader and writer, 3244
 portrait, 3239
Sharp, William (Fiona Macleod), Scottish poet and novelist, 3711
Shasta daisy, produced by Luther Burbank, 6260
Shat-el-Arab River, Iraq, near Basra, 6274
Shaw, George Bernard, Irish dramatist and critic, 3831
 portrait by Augustus John, 2673
Shaw, John Byam, British artist, Fool who would Please Everybody, picture by, 157
Shaw, Sir Napier, British meteorologist, his explanation of the Spectre of the Broken, 3168
Shaw, Richard Norman, British architect, 8609
 New Scotland Yard, designed by, 6607
Shawl, how to crochet a shawl, with picture, 3473
Shearwater, Manx, bird, 3999
 in colour, 3021

Sheave block, a pulley device, 6349
Sheba, Queen of, 6265
 visit to Solomon, 1525, 2356
 picture, 2354
Shechem, ancient town, Palestine, Jacob's Well, 3464
 Valley of Shechem, view, 3465
Sheep, story of family, 799, 1277
 Argentina's wool and mutton, 7017
 Australia's millions, 2446
 British Empire's production, 799
 Falkland Islands' production, 3558
 foreign breeds, characteristics, 1285
 French Africa's millions, 6744
 New Zealand's millions, 2698
 South Africa's production, 3187
 what is a lark ? 6102
 dipping, 802
 flock on footpath, by Millet, 2796
 grazing on cliffs, 3383
 merino, in Australia, 799
 New Zealand flocks, 1285, 2692
 shearing, 801, 802
 shearing sheep, design on Gobelins tapestry, 6736
 South Australian flock, 2569
 varieties, 1279-82

See also animal and industry maps under names of countries, and specific names of sheep

Sheep dog, related to wolf, 669
 picture, 668
Sheep ked, wingless fly, 6082
Sheep's bit scabious, what it is like, 5020
 flower, 5021
Sheep's fescue grass, 3306, 3305
Sheep's herb : see Sea plantain
Sheep tick, under microscope, 1914
Sheffield, Yorkshire, centre of steel industry, 214
 arms, in colour, 4991
 cathedral, 1832
 Town Hall, 4409
 university arms, in colour, 4989
Sheik el Beled, Egyptian sculpture, 3894
Sheikhs, independent Arab tribal rulers, 6266
Sheldrake, distribution of species, 3754
 in colour, 3022
 on lake, 3753
Shell, composition of seashell, 2495
 knife first made from, 2909
 myriads on ocean floor, 2495
 rocks formed from, 518
 why we hear sounds in them, 5619
 how does a mussel build its shell ? 1176
 how does the snail get its shell ? 5246
 how to make a collection, 2736
 where do shells come from ? 3392
 why can we hear waves in it ? 4759
 British and foreign, in colour, 1177-1180
 why found on mountain top, 643

See also Mollusc

Shell (gunnery), what keeps a shell from falling to the ground ? 1918
Shell (spherical), how to find cubic contents, 7076
Shell edging, needlework, how to work, with picture, 2860
Shelley, Percy Bysshe, English poet and writer of plays, 2598
 See also Poetry Index
 portrait, 2595
 portrait, with parents, 4134
Shellfish, origin on Earth, 10
 under microscope, 1911
Shell-Mex House, London, 4230
Shelter, an easily made shelter, 2484
Shelton, T., shorthand system used by Pepps, 6844
Shensi, province of China, 6502
Shenstone, William, : see Poetry Index
Shepherd, England's debt to, 3384
 Virgil on the work of, 800
 Shepherd of Pyrenees, painting by Rosa Bonheur, 3657
Shepherd and Nightingale, fable, 3624
Shepherdess, Millet's picture, 2793
Shepherdess and the Sweep, story, 5831
 picture, 5827
Shepherd's Calendar, pastoral poem by Spenser, 740
Shepherd's Hoard, The, story, 158
Shepherd's needle, flower, in colour, 4664
Shepherds of Arcadia, Poussin's fine painting in the Louvre, 1682

- Shepherd's purse**, seed production, 1065, 6228
 vitality of seeds, 3180
 flower, 4540
- Sheraton, Thomas**, English furniture maker and designer, 3860, 6737
- Sheraton chair**, 6733
- Sherlock Holmes**, detective character of Conan Doyle's novels, 3712
- Sherrer**, his work on X-ray crystal analysis, 2594
- Sherwood, Robert**, American writer, 4334
- She Stoops to Conquer**, play by Oliver Goldsmith, 1980
- Shetland Islands**, Scottish group of islands in the North Atlantic, origin of shawl, story, 5705
 maps, in colour, 7080, 7082
 pony, 1895
 woman knitting shawl, 5705
- She Who would Die for Her Friend**, story, 3134
- Shield** (in engineering), how the Great-head shield works, with pictures, 6216
- Shield** (heraldry), shapes, in colour, 925
- Shield-bug**, insect, 5719
- Shield fern**, two species, 1798
 male, life-story, 833
- Shields, Frederick**, Faith, picture, 1111
- Isaiah**, painting by, 2979
- Shiite**, or Shiah, Moslem sect, 6385
- Shikoku**, Japanese island, 6617
- Shilling**, what we can do with, 5389
 why does it have grooves round the edge? 5001
- Shillito, Edward**: see Poetry Index
- Shiloh**, Palestine, ruins, 3466
- Shingle**, why is there shingle on the south coast and sand on the east? 4639
- Shining hookeria**, flowerless plant, 3408
- Shintoism**, old Japanese religion, 6618
- Ship**, story of ships, 3573, 3703, 3817
 inventors of the steamship, 3733
 ancient Egyptian's trade carried on in ships, 427
 building: see Shipbuilding
 centre of gravity of, 5075
 development, 3214
 direction of, 617
 fire precautions, 3578
 First World War losses, 1710
 invisible pilot in harbours, 5128
 loading line, 6255
 navigation by radar, 3575
 Second World War losses, 1945
 watertight compartments, 2650, 3577
 wireless compass aid in fog, 2100
 wireless on ship, 2220, 3575
 world's biggest ships, 7060
- Wonder Questions**
 does a strong wind slow it down? 6598
 how do they sail against wind? 3277
 what is a paying-off pennant, with picture, 5981
 what is a ship's tonnage, 4015
 why does a steel ship float? 6856
 why have ships a water line? 6347
- Pictures of Ships**
 centre of gravity explained, 5073
 copper model, 74
 "crossing the line" ceremony, 3826
 first to cross Atlantic with steam, 3735
 flags of Steamship Lines, in colour, 6977
 Fulton's first steamship, 3735
 Great Western, early steamship, 3737
 guided by radar, 2468
 Henry Bell's Comet, 3735
 how raised by locks and lifts, 4878-80
 Indiaman in stormy sea, 4125
 interior scenes of great liners, 3818-26
 ironclad designed by Ericsson, 3737
 mail being hoisted on to Channel steamer, 4633
 Queen Elizabeth, artist's impression, 3573
 Queen Mary in Trafalgar Square, artist's impression, 3817
 reciprocating engine, 3213
 Symington's steamboat, 3735
 taking cable on board, 1606
 tug-of-war between paddle-boat and screw-vessel, 3735
 wireless cabin of Canadian Pacific liner, 2093
 See also Liner and Shipbuilding
- Shipbuilding**, story of building of a liner, 2647
 Belfast's importance in, 3068
 discovery of improved steels affects, 4104
 Norsemen make it an English national industry, 3030
 Edinburgh Castle being launched, 2658
 Orcares being launched, 2658
 pictures of building a liner, 2647-59
 See also Ship
- Ship-canal**: see Canals
- Shipka, battle of**, 5774
- Shiplake Rectory**, where Tennyson wrote, 3337
- Shiple, Sir Arthur**, British zoologist, tardigrada described, 3279
- Ship worm**: see Tereido
- Shiraz**, city of Persia (Iran), 6385
 Governor's house, 6397
 Shah-Chiragh mosque, 6385
- Shire**, derivation of word, 594
- Shire horse**, weight and strength, 1898
- Shire River**, tributary of Zambesi, shireled by Livingstone, 3002
- Shirley, James**: see Poetry Index
- Shirley poppy**, blue variety produced by Luther Burbank, 6260
 flower, 6383
- Shirshov, P. P.**, Russian scientist, arctic experiments on ice-floe, 6444
- Shirwa Lake**, Central Africa, discovered by Livingstone, 3002
- Shivering**, why do we shiver when very cold? 6103
- Shkodër, Albania**: see Scutari
- Shock**, why do I jump when I get a shock? 4892
- Shoes**, manufacture of, picture-story, 5481-86
 how to clean wet, 256
 why are high heels dangerous? 5735
- Shogun**, Japanese title, 6618
- Sholokhov, Michael**, Russian writer, 4820
- Shops**, assistants and Shops Act, 6255
 beginning of, 3384
 on a liner, 3824
 on London Bridge in 12th century, 547
 sixteenth-century, 3381
- Shore crab**, 5471
- Shoreham Church**, Sussex, 719
- Shore horsetail**, flowerless plant, 3408
- Short-billed minivet**, in colour, 3261
- Short-eared owl**, bird, in colour, 2898
- Shortfaced tumbler pigeon**, 4118
- Shorthand**, Pepys's diary written in, 18
 who invented shorthand? 6844
- Short History of the English People**, J. R. Green's great work, 3095
- Shorthorn**, breed of British cattle, 1153
 examples, 1160
- Shorthouse, Joseph Henry**, English author, 3712
- Short-sight**, what is meant by, 3864
- Short-tailed wallaby**, animal, 2395
- Short-toed eagle**, bird, 3634
- Shot**, leaden, how made, 5861
- Shovel**, steam-shovel used for road-making, 2161
- Shovel dipper**, excavator, 3034
- Shoveller**, bird, in colour, 2898
 head of, 3752
- Shrew**, smallest mammal, 2021
 curious forms, 296
 pictures of shrews, 293
- Shrewsbury**, capital of Shropshire, arms, in colour, 4991
 English bridge over the Severn, 7150
- Shrewsbury School**, arms, in colour, 4989
- Shrike**, bird, habits and food, 3020
- African**, in colour, 3142
- great grey**, 3015
- red-backed**, in colour, 3022
- red-backed**, nest and eggs, 2635
- red-backed**, route of migration, 223
- Shrimp**, sea crustacean, 5480
 picture, 5477
- Shrinking**, if the Earth is shrinking shall we ever be toppled off? 5128
- Shropshire**, English western county, 215
 places in, 7169
 road map, 7150
- Shropshire Lad**, A. E. Housman's famous poem, 4081
- Shropshire sheep**, characteristics of, 1284
- Shropshire Union Canal**, inland waterway, 4867
- Shrub**, difference between shrubs and trees, 3541
- Shrubby rocket**, 2661
- Shrubby sea blite**, what it is like, 5762
- Shubad, Queen**, discovery of tomb at Ur, 6871
- Shushak**, Fiume's Slav suburb, 4544
- Shushan**, ancient capital of Elam, 6273
- Shut-eye train**, picture to poem, 96
- Shylock**, character in Shakespeare's Merchant of Venice, 6041
 painting by Sir J. Gilbert, 1101
- Siam**, or Thailand, 6513
 Buddha and his pupils, Bangkok, 2029
 flags, in colour, 6975
 herd of elephants in river, 2025
 map, in colour, 7097
 Royal Palace, Bangkok, 6516
 Wat Cheng temple, 5082
- Siam, Gulf of**, 6513
- Siamese flag**, puzzle, and picture, 5814, 5438
- Sibbald whale**, 2148, 2147
- Sibelius, Jean**, Finnish composer, 150
 portrait, 145
- Siberia**, immense Russian territory in northern Asia, Jewish Republic at Biro-Bidzhan, 6016
 Polish patriots exiled to, 5028
 Russian colonisation begins, 5894
 map: animals, plants, and industries, 5906
 map, in colour, 7094
 map, physical and general, 5905
- Siberian sledge dog**, 668
- Siberian wild dog**, 536
- Siberian wolf**, 536
- Sicilian Vespers**, massacre of 8000 Frenchmen in Sicily by natives, 4795
- Sicily**, largest island of Italy and the Mediterranean, 4784, 4910
 archaeological discoveries, 6987
 Martyr Girl of Sicily, story, 6812
- Pictures of Sicily**
 Greek temples, 5508, 5510
 lemon gathering, 1815
 mosaic from an old castle, 443
 Roman theatre at Taormina, 6990
 scenes, 4915, 4923
- Maps of Sicily**
 animal life of the island, 4791
 general and political, 4789
 in colour, 7088
 physical features, 4793
 plant life, 4796
 showing historical events, 4795
- Sickert, Walter Richard, A.R.A.**, English painter, 2678
 his painting, George Moore, 2673
- Sicyon**, Greek town, once a centre of Doric art, 4138, 4278
- Sidcup bypass road**, view of section, 2164
- Siddhartha Gautama**: see Buddha
- Siddons, Sarah**, British actress. Gainsborough's painting of her, 2052
- painting by Sir Joshua Reynolds**, 2053
 portrait by Lawrence, 2179
- Sidereal Day**, what it is, 5121
- Sidney, Sir Philip**, English soldier, poet, and prose writer, heroic death at Zutphen, 5556, 6931
- his miniature in Windsor Castle**, 2049
- service in Netherlands**, 5528
- travel as a patriotic duty**, 3878
- last heroism**, 728
 memorial at Zutphen, 5539
 with his mother, 4132
- See also Poetry Index**
- Sidney Sussex College**, Cambridge, arms, in colour, 4988
- Sidon**, Lebanon, ancient port of Phoenicia, 6270
- Sarcophagus of the Weepers** found, 4395
 view, 3466
- Siegfried**, German legendary hero, 4422, 4695
- Siemens, Sir William**, British engineer and inventor, 5948, 5939
 open-hearth furnace invented by, 50
- Siena**, city of Tuscany, cathedral that all the artists of the town helped to set up, 5993
- Ghiberti's font in the Baptistry**, 4522
- Nicola's marble pulpit in the Baptistery**, 4522
- cathedral**, 5987, 6000

rare lantern from Siena, 70
Sieneſe art, decline after 14th century, 568
 Duccio founder of school, 565
 influence on Venetian art, 932
Sienskiewicz, Henryk, Polish novelist, 5029
Sierra Leone, British West African colony, 3318
 freed slaves settled in, 3244, 3318

Pictures of Sierra Leone

arms, in colour, 4985
 boys climbing trees, 3319
 flag, in colour, 6968
 Freetown from the sea, 3320
 map, in colour, 7098
 native family group, 3323
 weighing palm kernels, 3319
Sierra Madre, Central American mountain chain, 7005
Sierra Nevada, mountain range in Andalusia, Spain, 5270
Sight, curious optical illusion, 2117
 television experiment, 1476
 vision and sight compared, 1359

Wonder Questions

are pictures printed on the eyes ? 5250
 can a fly see all ways at once ? 5001
 can country people see better than town people ? 922
 do we see a thing as soon as we look at it ? 1678
 do we see things, or the light that comes from them ? 3250
 how can we see with eyes shut ? 3161
 how far can we see ? 6719
 is it possible to see the smallest things ? 1306
 is there a colour our eyes cannot see ? 561
 why cannot we see very small things with our naked eyes ? 5370
 why can't I see in the dark ? 439
 why do houses seem crooked when we look across a fire ? 4761
 why do things seem blurred when we look from a height ? 4892
 why do we see a black spot in the sky after looking at the Sun ? 5734
 why do we see in a mirror things that are not in front of it ? 1794
 why do we see lights when we get a blow on the eye ? 5368
 why have we two eyes ? 1046, 2416
 why if we look at red do we afterwards see green ? 1920

See also Eye

Sigismund, Holy Roman Emperor and Hungarian king, 6132, 7054
Signal, how traffic-operated signals work, with diagrams, 6850
 railway systems, 3951
 various types and methods, 4191
 what is the little box at the bottom of a signal post ? 5493
 automatic signalling on Western Region, 4073
 signal lamp for airman, 437
 pictures of various kinds, 4191-94
Signalling, by electricity, 855
 methods, 1601
 heliograph method, 3039
 international code, in colour, 6980
 sending messages in semaphore, with pictures, 5811
 signal book used at Trafalgar, 4859
Signalman, training, 4200
Signorelli, Luca, Italian painter, 825
 pictures in National Gallery, 574
Signs, how to speak by signs, and pictures, 5810
Signs of the Zodiac, what they are and what they mean, 6344
Sigourney, Lydia Huntley : see Poetry Index
Sikandra Tomb, near Agra, erected by Emperor Akbar, 5623
Sikang, Chinese province, 6500
Sikhs, British wars against, 2947
Sikiang, Chinese river, 6501, 6502
Sikkim, Indian State, 6512
Silanon, ancient Greek sculptor, 4270
Silchester, foundation of, 6918
Silencer, position on motor-cycle, 4326
Silene, flower, 6258
Silent Princess, story and picture, 4239

Silenus, mythological demi-god, 3517
 statuaria group by Praxiteles, 4272
Silesia, industrial area of Germany, 4426, 5030
Frederick the Great seizes it, 4296
Silica, found in horsetail stem, 3412
 what it is, 4018
 stinging nettle's hair contains, 2660
 pebbles cemented together by, 2004
Silicon, chemical element, 4470, 4222
 in gneiss, 768
 melting and boiling points, 4998
 origin of, 16
Silk, how it is made, 6091
 China's great export, 6502
 French industry at Lyons, 4169
 puzzle of the piece of silk, with picture, 6423, 6542
 what is artificial silk ? 5364
 basket of cocoons in Nassau, 3557
 picture-story, 6092-94
 See also Artificial Silk and Rayon

Silk-cotton tree, use of, 2568
 of Jamaica, 2560
Silkie Wife of the Shetland Isles, story, 1393
Silk moth : see Silkworm
Silkworm, brought to Europe 1500 years ago, 6202
 disease stamped out by Pasteur, 2624
 history of, 6459
 number required to produce one lb. of silk, 6091
 being fed on mulberry leaves, 6092
 caterpillars of silk moths, in colour, 6209-10
 life-story, 6091

Sill, Edward Rowland : see Poetry Index

Silaoam, Pool of, view, 3469
Silaoam inscription, Jewish newspaper of Isaiah's time, with picture, 5487
Silpha beetles, in colour, 6335-6
Silurian Age, what the Earth was like then, 1009
 Ancient Britain, map, 886
 animal life of, 11
 life and remains, 1009, 1010
Silva Carbonaria, Roman name for Ardennes, 5846
Silver, art of the old silversmiths, 6740
 as money, 6390
 Australia's production, 2570
 Bolivia's silver mountain, 7020
 Commonwealth's output, 6004
 conductivity : see Heat conductors, 7073
 good conductor of heat, 5321
 melting point, 7073
 specific gravity of, 4954
 weight of a cubic foot, 7074
 what is the hall-mark for ? 5616
 why does silver tarnish ? 4894
 why is a silver spoon blackened by egg ? 5615
 metallic or native, 1302
 tablet left by Romans in Britain, 723
 See also industry maps under names of countries

Silver birch tree : see Birch tree
Silver bromide, films and plates coated with, 4751
 crystals, 4749
Silver Cornet, The, story with picture, 4241
Silver grey fox, 536
Silver Jubilee, what it is, 6849
Silver money, legal use of, 5390
Silver pheasant, 4251
Silver-plating, making silver-plated forks, 2912
Silver spotted skipper butterfly, with egg, caterpillar, and chrysalis, in colour, 6203
Silver-studded blue butterfly, with egg, caterpillar, and chrysalis, in colour, 6204
Silvertown Way, London dock road, during construction, 2166
Silver-washed fritillary butterfly, with egg, caterpillar, and chrysalis, in colour, 6203
Silver-weed, flower, in colour, 4287
Silvia, Shakespearian character in Two Gentlemen of Verona, 6039
Simeon, Bulgarian emperor, 5772

Simeon II, boy king of Bulgaria, 5774
Simla, India, general view, 2950
Simmons, Edward, American decorative painter, 3237
 The Justice of the Law, painting by him, 3296
Simon, the Canaanite, Apostle, 6791
 portraits, 694, 6787
Simon, the Pharisee, Jesus entertained by, 4212
Simon, Professor, German scientist, inventor of the Singing Arc, 2215, 3642
Simonides, Greek iambic poet of Samos, 5182
Simon of Cyrene, Christ's cross carried by him, 4822
Simon Peter : see Peter, St.
Simon Says, game, 1372
Simon the Tanner, and St. Peter, 6172
Simple Simon met a Pie-man, rhyme and picture, 5671 ; in colour, 104
Simplon Pass, Alpine pass leading from the Swiss Valais to Domodossola, Italy, 4672, 6595
Simplon Tunnel, great example of tunnel engineering, 6595
Simpson, Charles, - English animal painter, 2677
Simpson, Sir James Young, Scottish physician, 2508
 chloroform experiment, 2503
Sims, Charles, R.A., English artist, 2678
 his painting, Clio and the Children, 2672
Sinal, Mount, Commandments given to Moses, 1240
Sinclair, D., foresaw the automatic telephone, 1971
Sinbad the Sailor, story, 2385
 picture, 2385
Sinding, Stephan, his sculpture, Rider on the Storm, 1615
Sinew : see Tendon
Singapore, British island-colony, 3422, 6513
 British take possession, 2080
 Supreme Court, 3432
 Victoria Memorial Hall, 3432
 Mohammedan mosque, 3419
Singing, how we sing, 3540
 what are William Byrd's eight reasons for singing ? 4392
Single-acting steam engine, how cylinder works, 3209
Single aster, flower, 6381
Single dahlia, flower, 6379
Single-horned xenarescus, beetle, in colour, 6336A
Single violet, flower, 6379
Sinhalese, Ceylon's ancient cities made by, 2813
 fishermen launching catamarans, 2816
Sinister, its meaning in heraldry, 924
Sinkiang, vast territory of Central Asia, 6500, 6509, 6510, 6512
 See also Chinese Turkestan

Maps of Sinkiang

general, 6520
 in colour, 7096
 natural features, 6518
Sinn Fein, Irish political party, Southern Ireland under its rule, 1825
Sinuus delessaria, seaweed, 3416
Siphon, how does a siphon work ? 3278
Siptah, king of Egypt, portrait, in colour, 317
Sippa, Babylonian city, 6800
 site found by Hormuzd Rassam, 6870
Sipylos, Mount, Hittite carving found, 6872
Siren, instrument used for measuring pitch of musical sounds, 6181
 how it works, 6303
Sirenia, order of aquatic mammals : origin of mermaid legends, 2145
Sirens, mythological sea nymphs, 3529
 story in Odyssey, 5306
Sirex, great-tailed wasp, 5844
 picture, 5839
Sir Guyon, Knight of Temperance, in Faerie Queene, 5919
Sir Isambard at the Ford, painting by Millais, 2553
Sirius, brightest star, 8116, 3725, 3849
 compared with Aldebaran, 3728
 distance from Earth, 2995

- star named in mythology, 3519
Sirius, s.s., first English steamship to cross Atlantic, 3738
Sir Mordant, in Faerie Queene, 5921
Sir Orfeo of Winchester, story, 4360
 picture, 4361
Sisal hemp, Bahama Islands export, 3554
 cultivation methods, 2566
 Tanganyika's production, 3315
 what it is, 2564
 growing in Queensland, 2560
Sisera, defeated by Israelites, 1365
Siskin, plumage and habits, 2901
 pictures, 2767, 2892, 3263
 route of migration, 223
Sisley, Alfred, French Impressionist painter of English descent, 3042
 snow scene, 3043
Sister Dora and the Toilers of Walsall, story, 6824
Sistine Chapel, Michael Angelo paints ceiling, 6185
 paintings by Michael Angelo on ceiling, 687, 690, 691, 695
Sisypheus, his punishment, 6930
Sits-by-the-Door, story, 6939
Situtunga, harnessed antelope, home and habits of, 1399
Sitwell, Dr. Edith, English writer and poet, 4083
Sitwell, Sir Osbert, English writer and poet, 3830, 4083
Sitwell, Sacheverell, English writer and poet, 4083
Siva, god of Indian trinity, 5983
Sixpence, the disappearing sixpence, trick, with picture, 3722
Six-plumed bird of Paradise, 2772
Six-spotted burnet moth, and caterpillar, in colour, facing 5935
Size, principles of measurement, 4833
 shrinkage of matter at low temperatures, 5319
 specific gravity explained, 4953
 what is size, 3284
Sizergh Castle, Westmorland, interesting Elizabethan house, 6237
Skånberg, Carl, Swedish painter, 3398
 his painting, Honfleur, 3402
Skarga, Peter, Polish author, 5027
Skate, fish, description, 5096
 in colour, 5099
Skating, the right way to skate, 6795
Skeleton, scaffold of the body, general description, 1565
 limbs described, 1693
 skull described, 1691
 elephant's compared with man's, 3163
 See also Backbone and Bones
Skelton, John: see Poetry Index
Skene, W., identified Carchemish as Hittite capital, 6872
Sketches by Boz, Dickens's first book, 2014, 2847
Skiddaw, mountain of Cumberland, 465
 from Lake Bassenthwaite, 472
Skilbeck, Clement, his painting of Jesus Christ, 3344
Skimmer, bird, characteristics, 3996
Skin (anatomy), how it is made and the work it does, 1429
 pressure's effect on its growth, 930
 structure described, 564
 why can moisture penetrate it? 5127
 healing of a wound, diagrams, 1431
 pictures of skin, magnified, 1431
 See also Sweat Gland
Skink, reptile, 4496, 4493
Skinner, Martyn, English poet, 4084
Skipjack, red beetle, in colour, 6335
Skipka Pass, Bulgaria, 5784
Skipper Butterfly, with egg, caterpillar, and chrysalis, in colour, 6208
Skittle player, sculpture, 5258
Skittles, word game with skittles, 875
Skłodowska, Marie: see Curie, Marie
Skoplye, formerly Uskub, town in Yugoslavia, 4563
Skram, Amalie, Norwegian novelist, 4941
Skua, characteristics, 3998
 Arctic skua's migration, 222-3
 various types, 2767, 2898, 3639, 3997
Skull, formation studied, 1691
 brain power not indicated by size and shape of, 2932
 brain protected by bones of, 1565
Java's Pithecanthropus erectus, 1877
 dovetailed bones, diagram, 1692
 proportion occupied by brain, 2933
 various types, diagrams, 1691
Skull cap, flower, in colour, 6129
Skulpin, Yellow, fish, in colour, 5100
Skunk, animal, 793, 788-9
Skuru Sound, Sweden, concrete bridge, 5160
Sky, blueness due to nitrogen, 1050
 could the sky fall down? 1181
 do fish fall from the sky? 6101
 how far off is the sky? 730
 how high is the sky? 2414
 when the sky is clear, where are the clouds? 5367
 why is it blue? 6234
 why is it dull before a storm? 6104
Skye, Isle of, Inner Hebrides, primitive huts, 3769
Skye terrier, characteristics, 670, 668
Skyllark, characteristics, 3015
 feeding habits, 6855
 bird, in colour, 2900
 finds its breakfast, 3019
Skyscraper, what is it? 4995
 use of steel frame, 6806
 world's highest skyscrapers, 7060
 Empire State Building, N.Y., 4995
 panoramic view of New York, 3673
 pictures of, 3675
Slade School of Art, influence of Professor Legros's teaching, 2668
Slaney, River of Leinster, Ireland, view at Wexford, 3072
Slanic, Rumania, salt mine, 1543-4
Slate, originated from mud, 888
 weight of a cubic foot, 7074
 making slates for builders, 5849
 Penrhyn quarry, 5845
 quarrying in North Wales, 5848
 pictures of industry, 2003-4, 2006-7
Slater, Francis Carey, South African poet, 4206
Slave Boy of Lahore, story, 6574
Slavery, abolition in British territory, 1582, 3244
 American Civil War fought on this issue, 172, 1638, 3795
 ancient civilisations built upon it, 428
 attacked by Sir Samuel Baker in the Sudan, 3006
 Benjamin Franklin's prayer, 5327
 conquerors of slavery, 3239
 Emin Pasha's suppression of, 3004
 England's share in, 1638, 2998
 Livingstone's fight against, 3002
 Romilly's denunciation of, 5448
 Uncle Tom's Cabin, 4333
 Whitney's cotton-gin invention prolongs slavery in America, 1638, 5943
 Whittier, the anti-slavery poet, 4203
 William the Conqueror suppresses, 3152
Slavonia, Yugoslav province, 4556
Sleep, children's need of it, 1549
 thought goes on during sleep, 813
 why windows must be open while we sleep, 1323
Wonder Questions
 does a flower sleep at night? 6106
 does a plant go to sleep? 1917
 do fishes sleep under water? 4994
 do our brains work during sleep? 5859
 do tea and coffee keep us awake? 2173
 do we always wake when we have had as much sleep as we want? 2044
 do we hear in our sleep? 4514
 is it bad to sleep with the Moon shining on us? 1182
 what wakes me in the morning? 64
 where am I in my sleep? 1549
 why cannot we grasp a bar tightly when we first wake up? 2542
 why cannot we sleep with our eyes open? 6103
 why can we sleep more quickly in the dark than in the light? 6727
 why does a snake coil up to sleep? 2043
 why does chloroform send us to sleep? 6940
 why do people walk in their sleep? 4516
 why must a baby have more sleep than a grown-up? 1920
 why, when I wake up, do I seem to have just gone to sleep? 3038
Sleeping Child, by Charderon, 1483
Sleeping Beauty, The, story, 4614
 pictures, by Sir E. Burne-Jones, 4608
Sleeping sickness, tsetse-fly as carrier of, 2628, 6088
 chemical remedy sought against, 4471
 parasite which causes the disease, 6958
Sleepy Student, The, story, 5707
Slender false brome, grass, 3310
Slender-flowered thistle, member of Composite family, described, 5022
 flower, in colour, 5143
Slosser, Mary, Scottish missionary in Africa, 1143
Sliding, the right way to slide, 6795
Slieve Bloom, mountain range of Ireland, 3061
Slieve Donard, mountain of Ireland, 3061
Slime, Old Testament name for petroleum, 2961
Slimy corderl anemone, in colour, 1556
Slip hook, mechanical movement, 6351
Sloe, wild fruit, in colour, 3672
 See also Blackthorn
Sloth, family, characteristics, 2270
 two kinds, 2271
 See also under specific names
Sloth Bear, characteristics, 792, 788, 790
Slovakia, country included in Czechoslovakia, 4552
Slowacki, Julius, Polish poet, 5028
Slow loris, animal, 164
Slow-worm, or blindworm, 4496
 in colour, facing 4469
Slubbing-frame, for cotton, 175
Slug, food and habits, 6584
 black, 6577
 sea slug, 5685
Sluggard, sculpture by Leighton, 4772
Slughi, dog of Persia, 669
Sluice, what it is, 4866
Sluter, Claus, Flemish sculptor, 4644
 sculpture at Champmol, 4645
Small blue butterfly, or Bedford blue, with egg, caterpillar, and chrysalis, in colour, 6208
Small bugloss, what it is like, 5023
 flower, in colour, 5142
Small bur parsley, flower, in colour, 4662
Small caddis-fly, insect, in colour, 5713
Small chyolocladia, seaweed, 3415
Small copper butterfly, with egg, caterpillar, and chrysalis, in colour, 6205
Small egg moth, and caterpillar, in colour, facing 5935
Small heath butterfly, with egg, caterpillar, and chrysalis, in colour, 6206
Small Holdings Act, introduction of, 1706
Small marsh valerian, plant, 5892
 flower, in colour, 6128
Small meadow brown butterfly: see Gatekeeper
Small pearl-bordered fritillary butterfly, with egg, caterpillar, and chrysalis, in colour, 6208
Smallpox, vaccination discovered by Edward Jenner, 2506
 why does vaccination save us from it? 5492
Small racquet-tailed kingfisher, bird, in colour, 3263
Small scabious, member of Teasel family described, 5288, 5763, 5761
Small skipper butterfly, with egg, caterpillar, and chrysalis, in colour, 6206
Small tortoiseshell butterfly, with egg, caterpillar, and chrysalis, 6207
Small white butterfly, with egg, caterpillar, and chrysalis, 6205
Smart, John, great English miniature painter of 18th century, 2419
 miniature portrait of a lady, 2421
Smeaton, James, diving-bell devised by him, with picture, 6593
Smell, a chemical sense, 3903
 animal's sense of smell, 2934
 is smell a wave in the air? 1552
 why do we lose the sense of smell? 681
Smelling salts, why do smelling salts revive us? 3036
Smelt, salmon family, 4982
 fish, in colour, facing 5197
Smilax, description and uses, 2689
Smirke, Sir Robert, English architect, 4228
Smirke, Sydney, British Museum building finished by him, 4228

Smith, Adam, Scottish political writer, 1582
on taxation according to ability to pay, 4658
Smith, Benjamin Leigh, English Arctic explorer, 6434-35, 6431
Smith, Donald: see Strathcona
Smith, Dunbar, architect, 6611
Smith, George, study of Assyrian tablets, 6872
Smith, Sir Harry, in South Africa, 3187
Smith, Horace, English poet, 3956, 3953
See also Poetry Index
Smith, James, English poet, 3956
Smith, Captain John, English adventurer, the pioneer of the colony of Virginia, 1020, 2075, 3674, 5207
grave in St. Sepulchre's Church, Holborn, 2075
meets Red Indian in Strand, 5209
Smith, John, great English mezzotint of late 17th century, 2426
Smith, John, English missionary, 3244
Smith, John Raphael, English mezzotint, 2426
mezzotint of Romney's Lady Hamilton, 2421
Smith, Samuel Francis: see Poetry Index
Smith, Spencer, English Antarctic explorer, 6562
Smith, Dr. William, English geologist, 2001
Smithson, brothers, early English architects, 6240
Smock, how to make one, with pictures, 5067
Smocking, needlework, how to do, with pictures, 5067
Smoke, impurities in it, 2866
what is smoke made of? 686
does smoke always come from a fire? 6234
why has not smoke a force like steam? 1414
why it goes up the chimney, 4999
Smokebox, on railway engine, 3946
Smollett, Tobias, Scottish novelist and historical writer, 2348
portrait, 2349
Smooth-haired fox terrier, 668
Smooth hawk's-beard, 5022
flower, in colour, 5144
Smooth meadowgrass, 3305
Smooth newt, amphibian, 4745
Smooth sea heath, flower, in colour, 5643
Smooth snake, in colour, facing 4469
Smut, disease which attacks oats, 1698
Smuts, General, credit due to him for South African peace today, 3188
Smyrna, or Izmir, Asia Minor, Hittite sculpture found in the Pass of Karabel, 6872
scenes, 6140, 6142
Snacks, how to make savoury, 1369
Snail, characteristics, 6583
flowers pollinated by them, 832
how does the snail get its shell? 5246
what has happened to the snails from all the empty shells? 2919
Boy with Snail, sculpture, 5132
palate, under microscope, 1916
shells, 1177, 6581
snail that woke up, 3279
various species, 1178, 6577, 6585
Snake, family and characteristics, 4615
deaths caused annually in India, 4490
egg-hatching methods, 2516
legs that disappeared, 454, 1770
poison in their teeth, 1929
prehistoric snakes, 454
quantity in India, 2809
can a poisonous snake bite without poisoning? 440
how does a snake move along? 4517
how long do snakes live? 6229
what makes the poison in a snake's fang? 815
why does a snake coil up to sleep? 2043
how it glides along, 4517
members of family, 4619
specimens in colour, facing 4469
Snake and the File, fable, 3992
Snakebite, serum from snakes, 4615
Snake-charmer, Indian, at work, 2954
Snake-locked anemone, in colour, 1553, 1556

Snake's head, flower, 6008
pictures, 6009, 6130, 6378
Snap, game, 5687
Snappdragon, 5521
in colour, 4663, 5393
Snapshot, how to take the first ones, 5065
Sneeze, what makes us sneeze? 6603
Snipe, British species, 3876, 3875
bird, in colour, 2900
Snip-snap-snorum, game, 5687
Snow, plant life influenced by, 2622
valuable in agricultural districts, 2867
weight of a cubic foot, 7074
Wonder Questions
how can it snow and rain together? 5004
how does salt melt snow? 3649
is snow frozen rain? 5000
why do our hands become warm after playing with snow? 4762
why is a snowflake lighter than a rain-drop? 1047
winter landscape, 4502
Snowberry, grows wild, 2661
wild fruit, in colour, 3670
Snow bunting, home, 2902
bird, in colour, 2767
Snow-daughter, story, 414
Snowden, Viscount, British politician, 1828, 2138
Snowdon, highest mountain in England and Wales, in Carnarvonshire, 1459
Snowdrop, member of Amaryllis family, described, 2566, 4779
flower, in colour, 4907
Snow leopard, or Ounce, 419
pictures, 422-3
Snow-partridge, distribution of, 4248
Snow plough, how it works, 5120
Snow White and the Dwarfs, story, 5703
Snowy anemone, in colour, 1554
Snowy owl, home of, 3504
Snuffers, recovered from Franklin's expedition, 4860
Soane, Sir John, English architect, the designer of the Bank of England, 4230, 6606, 6611
Soap, how does soap remove dirt? 4268
why cannot we wash the colour out of soap? 818
Soap-bubble, experiment by Cavallo, 20
how to blow soap-bubbles, 3348
how does it hold together? 311
why does it rise and fall? 312
how it holds together, 311
Soapwort, flower, in colour, 4286
Sobieski, John, Polish king and general, 4294, 5027, 6134
Sociable weaver-birds, nest, 2891
Society of English Artists, foundation in 18th century, 5692
Society of Friends, George Fox founds Quakers, 5451
Socotra, British protected island in the Arabian Sea, 3421
Socrates, Athenian philosopher, the most famous teacher of ancient Greece, 1161
father of philosophy, 4837
life and teaching, 5819
Plato developed his teaching, 1287
Pictures of Socrates
ancient sculpture, 5823
death, 1161, 5819
defies his judges, 4087
sees procession on Acropolis, 5821
talking to scholars, sculpture, 1162-3
Soda, caustic, 1063, 4348
Soda ash, production, 4348
Sodalite, mineral, 1303
Soda-water syphon, its working, 6354
Soddy, Professor Frederick, English scientist, experiments in radio-activity, 6316
Soderini, Piero, Raphael's introduction to him, 6190
Sodium, an element, 4222
in comets, 3806
in salt, 483, 1539
in Sun, 3116
soft metal which can be cut with a knife, 1539
yellow when hot, 4466
Sodium bi-carbonate, 1063
Sodom and Gomorrah, view of site, 3465

Sofia, capital of Bulgaria, 5774
Alexander Newski Cathedral, 5785
Soft brome, grass, 3309
Soft prickly shield fern, in colour, 1798
Sogne Fiord, Norway, 5156
Soissons, French city, Pepin crowned king of Franks in 751: see page 2521
Sokota, Abyssinian trading centre, mud huts, 6751
Sokoto, town of Nigeria, reached by Clapperton, 8000
Sol, classical god of the Sun, 3518
Solon goose: see Gannet
Solano, a wind, 5405
Solanium, wild fruit, in colour, 3671
Solar day, what it is, 5121
Solar system, description, 3109, 6546
comparative insignificance, 2990
its origin, 137
picture, 17
worlds that spin round Sun, 3117
Solar year, Caesar replaces lunar year by solar year, 1536
Soldanella, plant which grows under ice, 3280, 3281
Soldering, how to solder things, 1743
Soldier, why do soldiers break step while crossing a bridge? 5492
Soldier and his Judge, story, 3370
Sole, fish, life-story of, 5105
species, in colour, 5098
scales, under microscope, 1916
Solenette, fish, 6105
Solenodon, insect-eater, 296, 293
Solenoid, picture, 6850
Solemes Abbey, famous sculpture group by Ligier-Richier, 4644
Solferino, battle of, defeat of the Austrians in Italy, 4787
tower on battlefield, 4920
Solicitor, his training and work, 4777
Solid, specific gravity of solids, 4954
Solid furrow anemone, in colour, 1556
Solid heart-shaped epidium, beetle, in colour, 6336A
Solid ichneumon fly, in colour, 5714
Solid measure: see 7069
Solingen, German industrial town in Ruhr district, 4428
Solitaire, extinct bird, 2642, 4121
picture, 4119
Solitary ant, insect, in colour, 5714
Solitary wasp, and nest, 5839, 5843
Sollas, Professor, on mud deposits, 642
Solomon, story of, 2355
anoined king, 1988
his temple, 3902, 5378
Judgment of Solomon, 2357
scenes in his life, 2354
Temple of Solomon, 2355
Solomon, Solomon Joseph, English historical and portrait painter, 2678
his pictures, Laus Deo, 3641
Philistines capturing Samson, 1489
The Awakening, 2676
Solomon Islands, British island group in the Pacific, 3427
discovered by Mendana de Neyra, 2377
flag, in colour, 6967
natives, 3436
Solomon's Pool, view, 3467
Solomon's Stables, view, 3464
Solon, Athenian statesman, 3122, 3239
one of Seven Wise Men of Greece, 6848
portrait, 3119
Solstice, meaning of term, 2742
Somaliland, East African territory, British Somaliland, 3316
French Somaliland, 6750
Italian Somaliland, now under military administration, 6754
British Somaliland, flag, in colour, 6968
native with her camel, 3319
well near Jibuti, 6764
map, in colour, 7098
Somaliland wild ass, 1897
Somali ostrich, 4369
Sombrero and Bahama Lights, flag, in colour, 6967
Somers, Admiral Sir George, coloniser of Bermuda, 3553
Somersby Rectory, Tennyson's birth-place, 3337
Somerset, English western county, places in, 7169
Triassic remains, 1384
road map, 7118

- Somerset House**, London, 6253
architecture, 4016
designed by Sir William Chambers, 4228
picture, 4657
- Somme, Théophile F.**, Young Mason,
sculpture, 5132
- Somme, Battle of the**, in the First World
War, 1708
- Somnus**, classical god of sleep, 3520
- Sonata**, what is a sonata? 5737
- Song**, the writers of songs, 1261
early French songs, 4453
- Song in Praise of Music**, poem by
Dryden, 1610
- Song-koi**, River: see Red River
- Song of Sixpence**, rhyme, music, and
picture, 1961
- Song of the Shirt**, historical interest of
Tom Hood's poem, 1581
- Songs and Rhymes with Music**: see
Poetry Index
- Song that found a King**, story, with
picture, 1647
- Song thrush**, in colour, 2767
- Sonnerat's grey jungle fowl**, 4249
- Sonnet**, in poetry, 240
Milton's mastery of it, 1232
Shakespeare's sonnets, 860
why has it always fourteen lines? 6231
- Son-of-a-Peach**, story, 6689
- Soochow**, town of China, pagodas,
5082-83
- Soot**, particles in smoke and fog, 2866
- Sophocles**, Athenian tragic poet, 3124,
5184
See also Poetry Index
- Sorata**, one of the chief peaks of the
Andes of Bolivia, 7020
- Sorbonne, The**, Paris, what it is? 6103
view, 6365
- Sorel**, Agnes, her house at Orleans, 6359
- Sorghum**, cereal, grown in Africa and
America, 1702, 2312
- Sorrel**, relation of the great Water dock,
2684, 6011
common sorrel, in colour, 4418
various kinds of, 946, 4778, 5521
- Sorter**, Post Office sorter's work, 4627
- Sosigenes**, astronomer, helped Caesar
to introduce solar year, 1536
- Soto**, Hernando de, Spanish adventurer,
explorer of the Mississippi, 1020
- Sotomayer, Alvarez de**, Spanish painter,
3400
- Souchong**, variety of tea, 2314
- Soul**, vision of the soul, 1359
Buddhism would make the soul a
vacuum, 2030
Descartes thought the pineal gland its
seat, 4175
Ezekiel turned men's thoughts inward
to the soul, 913
immortality preached by Pythagoras,
1040
power given by faith, 1110
Soul and Body, oratorio, 5860
- Soul of Countess Cathleen**, story and
picture, 3249
- Soult, Marshal**, commander of the
French troops at the battle of Corunna,
1457
- Sound**, animals hear more acutely than
men, 561, 3298
effect of covering ears with hands, 5619
electronic devices in amplifying, 2715
how sound waves travel, 4098, 6179
light compared with it, 5818, 5935
over-tones or harmonics, 6308, 6425
picture of a sound can be drawn on a
sheet of paper, 6181
principle of echoes, 6062
produced by voice and musical instru-
ments, 6427
thinking in sounds, 560
waves of sound, 6059
- Wonder Questions**
can we abolish noise? 6102
does a sound go on for ever? 1305
does sound always travel at the same
rate as through air? 3279
does it travel in straight lines? 4641
how can sound come into a room
through a wall? 1181
- what do we mean by the length of a
sound wave? 5488
what makes the sound in the organ?
6232
why can we hear the scratching of a pin
at the other end of a pole? 1182
why do empty vessels make more sound
than full ones? 440
why does a fog deaden sound? 2173
why does a megaphone make the voice
sound louder? 5127
why does a tuning-fork sound louder
when it touches wood? 5370
why does the flash from a gun precede
the noise? 4996
why do voices sound hollow in an empty
hall? 7664
why do we hear better on water than on
land? 312
how sound travels, 4641
tuning-fork experiment, 6179
See also Hearing, Music, Noise,
and Sound wave
- Sound, The**, strait connecting the Baltic
with the Kattegat and North Sea,
5148
- Sounder**, in telegraphy, 1469
- Sound film**: see Cinema
- Sounding**, in navigation, how a sounding
is obtained, 3576
- Sound track**, of a gramophone record
313
- Sound wave**, dome of St. Paul's, and
why a whisper is heard across it, 2172
effect in telephones and speaking-tubes,
1725
noise explained, 6842
regular sound waves go to formation of
music, 6180
supersonic waves, 6082
what is meant by its length? 5488
length in air, steel, and water, 6059
striking drum of ear, 3297, 3299
visibility experiment, 6425
- Soup**, how to make, with picture, 1369
- Sour Grapes, The**, fable, 4116
- South Africa**, Union of, 3183
African territories associated with it,
3311
discoveries during search for missing
link, 2539
High Commission Territories, 3311
how it became British, 2076
in literature, 4336
part in World Wars, 3188
poets, 4206
products given to British Empire and
Commonwealth, 2074
self-government, 1708
- Pictures of South Africa**
arms, in colour, 4985
Bloemfontein Post Office, 3194
British entry into Cape Town, 2081
flats, in colour, 6965, 6968
Hartebeestpoort Dam, Transvaal, 5972
Kruger memorial at Pretoria, 3194
National Park scenes, 3182
native scenes, 3183, 3190-3
pictures of towns, 3189
postman, 4636
railway engine, 3510
Rhodes Memorial at Rondebosch, 3195
Rhodes' grave, 3311
scenery, 3185, 3194
surf-riding at Durban, 3194
map, in colour, 7099
maps of industries and physical fea-
tures, 3196-8
See also Boer War, Cape Province,
Transvaal, and so on
- South African bull-frog**, 4741
- South African crowned crane**, 3264
- South African kestrel**, bird, 3636
- South America**, description, 6999
animal life shows former connection
with Australia, 2444
Spanish yoke thrown off, 7003
wool production in one year, 799
scenes, 7009-15
- Maps of South America**
animal life of the country, 7028-29
general and political, 7023
in colour, 7104
physical features, 7024-25
plant life, 7026-27
- South American giant toad**, 4741
- Southampton**, port of Hampshire, Eng-
land, Mayflower and Speedwell set out
on voyage to America, 1206
Southampton Water, 344
liner in the docks, 349
arms, in colour, 4991
Bar Gate, 1593
- South Australia**, Australian central
State, 2574
Sturt explores it, 6088
Adelaide, King William Street, 2578
dam at Blanchetown, 5972
drying fruit at Renmark, 2454
flag, in colour, 6967
flock of sheep, 2569
smelting works at Port Pirie, 2455
Waterfall Gully, near Adelaide, 2571
- South Carolina**, American cotton State.
flag, in colour, 6970
- South Dakota**, American State, flag, in
colour, 6971
- South Downs**, range of chalk hills in
South-East England, 467
views, 469, 471
- Southdown sheep**, characteristics, 1234
- South Eastern & Chatham Railway**,
absorbed by Southern Railway, engine,
in colour, 1044
- Southern Region**, British Railways
Group, 3950
signal-box on electrified railway, 4192
- Southern Rhodesia**, British territory in
Central Africa, 3312
Birchenough Bridge, over the River
Sabi, 3313
Victoria Falls, 2500, 3313
See also Rhodesia
- Southey, Robert**, English poet and his-
torian, 2472
on quackadaming, 2158
portrait, 2471
See also Poetry Index
- South Georgia**, Falkland Islands depen-
dency with a whaling station, 3558,
6549
- Sir Ernest Shackleton's burial place**,
6562
- South Kensington Museum**, Sir Aston
Webb builds it, 4230
- South Magnetic Pole**, discovery of, 6554
- South Orkneys**, dependency of the
Falkland Islands, 3558
- South Pole**, Antarctic explorers:
Amundsen, Scott, and so on, 6549
Byrd's expeditions, 6562
coalfields in, 6562
length of night, 2742
what it would be like if we could stand
there, 6346
Wilkins's 1928 expedition, 6562
scenes, 6548, 6553, 6555, 6557, 6561
map of Antarctica, 6551
- South Sea Bubble** (1720), a financial
disaster, 1327
- South Sea Islands**, natives dive into sea
for fresh water, 4638
- South Shetlands**, dependency of the
Falkland Islands, 3558
- South Victoria Land**, Antarctica, 6550
- Southwark**, architecture of Anglian
cathedral, 5871; views, 1217, 5881
- Southwell Cathedral**, Nottinghamshire,
south transept door, 5877
- South-West Africa**, formerly a German
colony, but now a protectorate of the
Union of South Africa, 3188
map, in colour, 7099
- Soutine**, French painter, 3046
- Sovereign**, coin, standard weight of,
5390
- Soviet Russia**, a republic of U.S.S.R.,
6014
See also Russia and U.S.S.R.
- Sowbread**, ivy-leaved, in colour, 4907
- Sow-thistle**, what it is like, 4542, 4541
species, in colour, 4664, 5144
- Soya bean**, valuable food, 2432
as it grows, 2441
- Space**, what is meant by it, 861
immensity, 2996, 3725, 3854
measurement explained, 4834
what is contained in it, 12, 139
do all things move in space? 6233
- Spade the gardener**, game, 5687
- Spain**, country of S.W. Europe, 5269
architecture: see Spanish architecture
Armada defeated, 1034, 3880, 5276

art: see Spanish art
civil war, 5277
colonies break away, 5276
declaration of republic, 5276
history told by Prescott, 4336
literature: see Spanish literature
mineral wealth, 5277
Moorish occupation, 687
Netherlands under Spain, 3880, 5527

Pictures of Spain
flags, in colour, 6975
industrial life, 5271, 5273
Inquisition scene, 493
life among the people, 5275, 5277
railway engine, 3512
scenes from cities and country, 5279-86

Maps of Spain
animal life of the country, 5406
general and political, 5404
in colour, 7085
industrial life, 5408-9
physical features, 5405
plant life, 5407
showing historical events, 5410-11
Spalato, or Split, Yugoslav port, 4556
Roman buildings, 2882, 5504
Spaniel, characteristics, 670
pictures of varieties, 665, 666, 668
Spanish American War, American gains, 3796
Spanish architecture, styles, 5994
Moorish work, 5622
Renaissance period and Plateresque decoration, 8372
pictures, 5621, 5623, 5625, 5629-33
Spanish art, its story, with pictures, 1307
revival in modern times, 3400
Spanish chestnut, or sweet chestnut, family to which it belongs, 4038
uses of wood, 3788
where it came from, 2066
fruit, in colour, 3669
how they grow, 2067
tree, leaves and flowers, 3551
Spanish fly: see Cantharides
Spanish language, development, 5055
Spanish literature, 5055
Spanish moss, nature and use, 3058
the way it grows, 3059
Spanish newt, amphibian, 4745
Sparkling plug, what it is, 4322
in motor-car engine, 4320
in two-stroke engine, 4329
Sparrow, varieties and habits, 2901
house sparrow, farmer's enemy, 6855
varieties, in colour, 2768, 2899
Sparrowhawk, characteristics, 3631
bird, in colour, 2766
pursuing chaffinches, 3627
specimens, 3636
Sparta, site of old and new cities, 5372
Dorian centre, 4024
6th-century sphinx found there, 4031
Spartans, defence of Thermopylae, 3123
idea of courage, 373, 5372
who were they? 5372
Spasm, muscular spasms, 4996
Spathé, in botany, 6495
Speaker, who is Mr. Speaker? 2300
Speaking Clock, TIM, gives time by telephone, 3168
Speaking-tube, different from telephone, 1725
Spear, origin of fork, 2909
Spear plume thistle, in colour, 4288
Specific gravity, meaning of, 814, 4953
explanatory diagram, 4953
See also Gravitation
Specific name, what it is, 6490
Speckbacker, Albert, French army held up by, story, 6951
Speckled wood butterfly, with egg, caterpillar, and chrysalis, in colour, 6205
Spectacled bear, 787
Spectacles, used in 13th century, 1883
Spectre, what is the spectre of the Broken? 3168
Spectroscope, analysis of stars by, 3850
Sir W. Huggins develops, 3616
how used, in colour, facing 3725
Spectrum, discovery by Sir Isaac Newton, 5816
colours which form it, 3784
significance of lines, 3850
in colour, facing 3725
Speech, how did men learn to talk? 6225

who began talking? 921
why can't a baby talk when it is born? 6600
Speed, Harold, his picture, Rosalind gives Orlando a chain, 1103
Speed, of comets, 3602
of falling object, 4835
of planets, 7057
can we measure the speed of thought? 6227
how do we know the speed of light? 4993
how fast do animals travel? 6852
what is the highest speed that we can count? 6344
Speed indicator, in aeroplane, 4692
Speedometer, how does it work? 61
centrifugal and chronometric, 62, 63
Speed recorder, on ships, 3575
Speedwell, Pilgrim Fathers' ship, 1206, 3792
Speedwell, varieties, in colour, 4285, 4420, 4662, 4908
Speke, John Hanning, English African explorer, 3006
appeal to hostile natives, 3005
portrait, 2997
Spelling bee, game, 1372
Spencer, Herbert, English philosopher and sociologist, as a writer, 3830
studies of the mind, 3050, 4034
theories about the Universe, 5078, 5444
with parents, 4135
Spencer, Stanley, English painter, 2678
his painting, Cottages at Burghclere, 2676
Spender, Stephen, British poet, 4084
Spending, how to spend money, 5755
See also Money
Spenser, Edmund, English poet, 739
Faerie Queene, stories from, 5919
Raleigh's friendship with him, 5207
poems dropping pens in his grave, 741
reading poem to Raleigh, 739
See also Poetry Index
Sperm whale, or Cachalot, characteristics, 2149, 4858, 5230; picture, 2147
Sphenodon, curious lizard, 4893
Sphere, how to find area of surface, cubic contents, and cubic contents of segment of sphere, 7075
SpheX wasp, cricket-eating family, 5842
near its burrow, 5834
Spezia, Italian west-coast port, 4910
Sphinx, what it was, and its place in Egyptian architecture, 5379
Temple of the Sphinx, 6860
the Great Sphinx, 3901, 5379, 6876
avenue of sphinxes at Karnak, 5387
Great Sphinx, 5384, 6868, 6879
sculptured examples, 3893, 3896
Sphinx couchant, heraldic charge, 4986
Spice, plants which yield, 2803
plants, in colour, 2686
Spickel: see Spiguel
Spider, the spider family, 5591
can a spider's web be made into cloth? 4391
pictures of spiders, 5591, 5593, 5597
under microscope, 1912, 1914
See also specific names
Spider Fight, comic Greek poem, 5181
Spider orchid, what it is like, 5267
flower, in colour, 5395
Spiguel, or Bald-money, origin of name, 5520
flower, in colour, 5641
Spike, in botany, 6495
Spiked goat grass, seeds work along the ground, 946
Spiked Star of Bethlehem, member of Amaryllis family, 4780
Spikenard plant, member of Valerian family, 6010
ploughman's spikenard, flower, 5761
Spinach, of Goosefoot family, 2436
Spinal column: see Backbone
Spinal cord, brain's connection with, 1569
structure, 2800
Spinalunza, how children saved the town, story, 6569
Spindle, spinning twine for nets, 181
Spindle tree, fruit, in colour, 3671
Spine: see Backbone
Spinel, mineral, 1301
Spinet, piano compared with, 675

Spinifer, how its seed is scattered, 949
Spinning ant, nest, 5965
types, 5961
Spinning-jenny, invented by Hargreaves, 172, 5939
in rope-making, 180
Samuel Crompton blames it, 5938
Spinning machine, used in manufacture of Rayon, 6097
Spinning-mule, invented by Crompton, 172, 5941
Spinning water-frame, invented by Arkwright, 172
Spinoza, Baruch, Jewish philosopher, 4840
rejects bribe, 4836
Spiny-tailed iguana, reptile, 4493
Spirea, flower, 6377
Spiral gear, in mechanics, 6350
Spire, finest in England at Salisbury Cathedral, 5871
Spires, or Speyer, old Bavarian city, 5746, 5750
Spirit, Jesus declared the Spirit to be the master of life, 1666
Spirit, (alcohol), tax explained, 4680
Spirit King, The, story, 4486
Spitsbergen, how does it work? 5616
Spitsbergen, or Svalbard, mountainous Arctic archipelago, 4601, 5150
glacier, 2249
Red Bay, 5168
Spleen, organ of body, 1060
Splenwort, various species, 1798, 1800
Splendid dolichotoma, beetle, in colour, 6336A
Splendid grass parakeet, in colour, 3142
Splicing, splicing a stick, 1368
Splinter, how to get a splinter out, 1493
Split: see Spalato
Split moss, spore capsules, 947
Spolem, Co-operative Union movement in Poland, 5031
Spondyles, shell, 1179
Sponge, what is it? 917
the story of the sponge, 6695
how to clean one, 256
fragments under microscope, 1913-14
pictures of the industry, 917-919
varieties, 920
Spontaneous Combustion: see Bacillus subtilis
Spoon, manufacture, 2913
why do we put a spoon in a glass before pouring in hot water? 3648
at various stages of manufacture, 2909
Spoonbill, bird, 3873, 3868
roseate spoonbill, in colour, 3262
Spoons, game, 1748
Spore, in plants, 704, 1578
Sporochnus, stalked, seaweed, 3414
Sporophyll, what it is, 6490
Sporozoa, an order of protozoa, 6959
Sport, manufacture of equipment, picture-story, 4259-64
Spotted crane, bird, in colour, 3024
Spotted cuscus, animal, 2396
Spotted flycatcher, bird, in colour, 2897
Spotted knot beetle, in colour, 6335
Spotted mosquito, chrysalis, 6082
Spotted native cat, or dasyure, 2395
Spotted orchid, what it is like, 4781
Spotted salamander, amphibian, 4745
Spotting the Stranger, game, 2116
Sprat, fish, characteristics, 5102
in colour, 5100
Spreader, apparatus used in making Panama Canal, 2173
Spreading bell-flower, description, 4781
flower, in colour, 4906
Spreading millet grass, 3308
Spreading orache, what it is like, 5762
Spreading sea lavender, flower, 5761
Spring (mechanical), watch's spring and its working explained, 1184
Spring (season), allegorical painting by Botticelli, 569
painting by Mauve, 3775
symbolical picture, 267
stars in Spring as seen by ancients, 2991
Spring (water), fresh-water springs in sea, 4633
how it is formed, 1413
New Zealand's hot springs, 2694
Spring bitter vetch, seeds, 945
Springbuck, a genus of S. African gazelles, 1400

Spring cinquefoil, flower, in colour, 4420
 Spring equinox, what it is, 6975
 Spring of Saint Boniface, story, 5958
 Spring squirrel, in Abyssinia, 1030
 Spring-tail, insect family, 5722, 5721
 hairy-backed, under microscope, 1914
 Sprocket wheel, 6349-50
 Spruce fir, description, 3789
 tree, leaves and flowers, 3549
 Spurge, species, in colour, 3667, 4661
 wood spurge, 4779
 Spurge hawk moth, and caterpillar, in colour, facing 5935
 Spurge laurel, flower, 4778
 fruit in colour, 3665
 Squacco heron, bird, 3868
 Squarcione, Francesco, Italian painter, 931
 Square, how to find dimensions, 7076
 how to make a square from ten pieces of card, 3966, 4095
 problem of the chequered square, with picture, 5563, 5686
 queer pictures built from squares, 250
 square puzzle, and picture, 4592, 4712
 train made from, and picture, 379
 can we square a circle? 4265
 Square Measure, 7069
 Squash, how to play, with pictures, 5315
 Squeak Piggy, game, 1746
 Squid, species of Cuttle, 2149, 5232
 picture, 5229
 Squill, plant, description, 2690
 plant, in colour, 2687
 vernal squill, 5761
 Squire, Sir John Collings, English poet, 3881, 4082
 See also Poetry Index
 Squirrel, species and habits, 1030
 various types, 1031-3
 See also under specific names
 Squirrel, The, Sir Humphrey Gilbert's ten-ton ship, 1020, 5207
 Staff, Polish poet, 5029
 Staff, why is one sometimes given to an engine driver? 6723
 Stafford, capital of Staffordshire, arms, in colour, 4991
 Staffordshire, English Midland county, places in, 7170
 road map, 7148
 Staffordshire and Worcestershire Canal, inland waterway, 4887
 Stag-beetle, home in old trees, 6332
 male, in colour, 6335
 Staghorn moss, flowerless, plant, 3408
 Stag in the Ox-stall, fable, with picture, 3865
 Stag Looking into the Water, fable, 3743
 Stag with One Eye, fable, with picture, 3991
 Stains, how to clean stained clothes, 256
 Staircase, moving, how it works, 683
 at Piccadilly Underground Station, 4380
 Stalactite, what is a stalactite? 6845
 Calgardup cave, West Australia, 2006
 Yallingup cave, West Australia, 6845
 Stalagmite, what it is, 6845
 Jenolan caves, New South Wales, 6845
 polished section of crust, 2005
 Stalin, Joseph, supreme head of the U.S.S.R., 5900, 6018
 Stalingrad, Russian advance from in Second World War, 1947
 siege of, by Germans during Second World War, 1945
 Stalin, Mount, mountain of the Pamir range, 6014
 Stalin White Sea-Baltic Canal, 6023
 Stalked sporophorus, seaweed, 3414
 Stamen, in botany, 332, 831
 different forms, 335, 6495
 Stamford, Lincolnshire, Bede House, or Brown's Hospital, 6240
 Stamp : see Postage stamp
 Stamp Duty, what the Stamp Duties are, 4659
 Stance, meaning of word, 745
 Standerat, Swiss house of parliament, 6856
 Standing, how we balance, 3405
 Stand-up mags, game, 5562
 Stanley, Henry Morton, Welsh explorer who found Livingstone, 3004, 6750
 wrote words of Psalm in his diary, 2110

portrait, 2997
 Stanley, Thomas, portrait by Lely, 1924
 Stanley, Rev. William, heroism during plague, 2020
 Stanley Harbour, Women of, story, 5822
 Stanleyville, town, Belgian Congo, 6752
 Stannite, tin pyrites, mineral, 1304
 Stanton, Sir H. Hughes, English artist 2877
 Stanza, Spenserian type analysed, 742
 Star, the stars in their brightness, 3725
 what we know about the stars, 3849
 what is happening in the sky? 3973
 brightest stars, 7061
 classical derivation of names, 3518
 comparison with Sun, 3116
 constellations named, 2991
 first map drawn by Thales, 3487
 how to make paper decoration, with diagrams, 6669
 Kapteyn's theory that stars are moving in two great streams, 6545
 legends of, 5589
 light due to power of, 559
 why we cannot see a faint star if we look straight at it, 3783
 why we mistake double stars for single, 3782

Wonder Questions

are the stars round? 6729
 do the stars fall down? 5000
 how can we tell a star from a planet? 1550
 how many stars do we see? 5127
 what holds them in their place? 190
 why are there more stars some nights than others? 684
 why do they twinkle? 5858
 why do we not see the stars by day and by night? 1918

Pictures of Stars

Algol passing dark companion, 3851
 as seen by the ancients, 2991-4
 Betelgeuse compared with Sun, 3849
 binary Castor, position at different dates, 3851
 cluster in Canes Venatici, 3975
 direction finding by stars, 3729-32
 distance from Earth, 3726
 Great Bear, movements, 3725
 Milky Way photographed, 3727
 Mizar, double star, 3851
 multiple star in Orion, 3851
 Northern and Southern Stars in middle of months, 3729-32
 what stars are made of, in colour, facing 3725
 Zeta Cancri, in different years, 3851
 See also names of Stars
 Starch, conversion from sugar, 4346
 vast importance, 1292
 why does it stiffen clothes? 1048
 See also Carbohydrate
 Starfish, characteristics, 6702
 bird's foot starfish, 6697
 opening oyster shell, 6697
 under microscope, 1910, 1913-15
 Starkey, Leslie J., discoveries at Lachish, 6993
 Starling, Professor, bacteriologist and scientist, 2628, 3176
 Starling, bird family, 2891
 feeding habits, 6855
 speed of flight, 6852
 pictures, 2765, 2892-3
 Star of Bethlehem, member of Amaryllis family, 4780
 Starr, American engineer, inventor of electric lamp, 1098
 Starry clover, seed, 946
 Starry ray, fish, in colour, 5097
 Starry saxifrage, 5519, 5521
 Starry scabious, seeds, 946
 Stars and Stripes, history of America's flag, 1330, 6962-63
 flags, in colour, 6971
 Star-thistle, flower, in colour, 5144
 Star wheel, in mechanics, 6350
 Stassfurt, famous German salt mines in Prussian Saxony, 4426
 State, how we are looked after by the State, 6253
 dispute with Church, 6921
 State Archives, origin of, 5366

State farms, started by Stalin in Russia, 5900
 States-General, French representative assembly, 648, 3924
 States-General, in Netherlands, first national assembly, 5527
 Statesmen, British statesmen, 2133
 Static, state of electricity, 108
 Statute Law, consists of Acts of Parliament, 4773, 4901
 Statute of Labourers, what it was, 3638
 Statute of Westminster, Canada's rights through, 2321
 power given to Dominions, 1828
 Stavanger, fishing port in south-west Norway, 5151
 Stead, William Thomas, British journalist, memorial in London, 1222
 Stealing, once punished by hanging, 243
 keeping lost articles tantamount to stealing, 4902
 Steam, its mighty power, 3205
 Dr. Joseph Black's work, 2748
 expansion of, 3205, 3331
 force explained, 1414
 future as power, 3214
 pressure in locomotive, 3943
 weight of a cubic foot, 7074
 why does a kettle sing? 5001
 why does steam put a light out? 686
 Steam blast, invention, 2754
 Steamboat: see Ship
 Steam-carriage, of 19th century, 1580
 Steam chest, in railway engine, 3946
 Steam coach, Duke of Wellington out for a ride, 2745
 Steam engine, development of steam as power, 3208
 Newcomen's improved by a boy who wanted to play, 5017
 Newcomen's pump engine, 2836, 3209
 pumping engine invention in coalmine led to railways, 5884
 road vehicles driven by steam in 19th century, 4319
 turbine displaces reciprocating engine in ships, 3574
 Watt's inventions, 2748, 3209

Pictures of Steam Engines

double-acting, how cylinder works, 3209
 driving an electric dynamo, 611
 engine of the Comet, 4862
 first steam engine made by Hero, 2747
 Gurney sees Trevithick at work, 2755
 Gurney trying his road coach, 2749
 Murdoch's locomotive, 2747
 Newcomen's model, 2747
 Newcomen's pump, how it worked, 3209
 reciprocating engine for ship, 3213
 single-acting, how cylinder works, 3209
 Trevithick on his locomotive, 2749
 Watt showing model to Boulton, 2749
 See also Railway Engine
 Steam pipes, in railway engine, 3946
 Steamship: see Ship
 Steamship Lines, flags, in colour, 6977
 Steam shovel, for road-making, 2161
 Steam turbine, development, 3214
 first steam turbine, invented by Hero of Alexandria, 2745
 Sir Charles Parsons invents, 3738, 4104
 modern liner's turbines, 2659
 ship's turbine, 3211, 3213
 what the inside is like, 3211
 Stearine, candles made of, 1670
 Stearn, C. H., artificial silk pioneer, 4105
 Steel, how it is made, 1183
 conductivity, 7073
 improved steels discovered, 4103, 4104
 Luxemburg's production, 5652
 made in electric furnace, 1228
 melting point, 7073
 passing X-rays through, 2588
 processes invented by Siemens and Bessemer, 5948
 properties, 360, 1183
 radioactive carbon used in making, 4814
 United States' production, 3681
 weight of a cubic foot, 7074
 why does steel strike a spark when hit by a stone? 4517
 manufacture, 49-58
 works at Bilbao, 5273
 See also industries maps under names of countries

Steele, Sir Richard, Irish essayist and writer of plays, 1730
 Addison dictating essay to, 1731
Steen, Jan, Dutch portrait painter, 1428
Steer, Philip Wilson, English painter, 2677
 his painting, End of the chapter, 2669
Stefan of Rumania, story, 6194
Stegomyia: see Mosquito
Stegosaur, prehistoric creature, 11
Stein, Sir Aurel, British archaeologist, excavations in Chinese Turkestan, 1292, 6995
Stein, Heinrich Friedrich Karl, Baron von, German statesman, 5895
Steinbeck, John, American writer, 4334
Steinheil, Carl, German pioneer of the telegraph, with portrait, 3359
Stella, s.s., heroism of stewardess, 6446
Stelvio Pass, Alpine highway between the Val Tellina and the valley of the Adige, 2169
Stems, in botany, different kinds, 6494
Stem-stitch, how to sew, with pictures, 2487
Stencilling, how to do it, with pictures, 4707
Stendhal, French writer, 4457
Stephen, king of England, 718
Stephen, St., first Christian martyr, his teaching and death, 5882
 in dispute with doctors, painting by Carpaccio, 278
 martyrdom, 5678
Stephen, St., the first Magyar king and founder of Christianity in Hungary, 4547
Stephen, Sir Leslie, English author, 3828
Stephens, James, Irish poet and writer, 4080
 See also Poetry Index
Stephens, W. Reynolds, in Arms of Morpheus, painting by, 3524
Stephenson, George, English inventor, 2754
 effect of railway on England in 19th century, 1584
 his steam locomotive, 2836
 Liverpool-Manchester line, 2755
 railway gauge fixed, 3948
 Rocket engine, 2755, 3214
 tube boiler, 3212
 at work on model of Rocket, 2753
 first railway bridge built by him, 2747
 portrait, 4135
 Rocket as it is today, 2747
 Rocket on its first journey, 2750
Stephenson, Robert, British engineer and son of George Stephenson, 2754
 Britannia Bridge built by, 548
 portrait, with father, 4135
Steppes, vast grassy plains in south-east Russia and West Siberia, 2127, 6014
 vegetation found on, 1070
Step pulleys, for two speeds, 6349
Step Pyramid, built by King Zoser, 3165
Stereoscope, how it works, 1046
Sterilisation, in modern surgery, 2624
Sterling, why is British money called sterling? 6849
Sterling, John, Scottish author, 3218
Stethoscope, Laennec's invention, 2504
 Laennec treating patient, 2503
Stettin, Poland: see Szczecin
Stevens, Alfred, Belgian painter, The Present, painting by, 3535
Stevens, Alfred, English sculptor, 4767
 bust, 4765
 Mother and Child, painting by, 3660
Stevenson, Robert Louis, Scottish poet, essayist, and novelist, as essayist, 2970, 2972
 as storyteller, 3711
 powers of describing a journey, 3829
 portrait, 3711
 portrait, with mother, 4134
 See also Poetry Index
Stewardess of the Stella, story, 6446
Stewart, Allan, Sir Calahad, painting by him, 6948
Stewartby, Bedfordshire, view of world's largest brickworks, 1789
Steyr, industrial town of Upper Silesia, scene, 4560
Stheno, classical monster, 3530, 3736

Stibnite, sulphide of antimony, 1302
Stick, why does a stick make a noise when swung in the air? 1184
Stick and ring, game, 3108
Stickerchief, game, 1863
Stick insect, natural camouflage, 5718
 several on twig, 5719
Stickleback, fish, characteristics, 4978
 in colour, facing 5197
 fifteen-spined, in colour, 5100
Stifter, Adalbert, Austrian writer, 4699
Stigand, Archbishop, picture in Bayeux Tapestry, 713
Stigma, what it is, 588
 of meadow fox-tail grass, 581
Stilbite, mineral, 1304
Stilted plover, bird, 3875
Sting, how to treat insect stings, 6178
 why does a bee sting? 190
Sting-bull, or great weaver, fish, 5105
Stinging nettle, uses, 4283
 what makes a nettle sting? 61
 what happens when it stings, 2660
Sting-ray, fish, poisonous tail, 5101
Stirling, historic capital of Stirlingshire, 894, 952
 pictures, 1336-8
Stitch, needlework stitches: see under specific names
Stitch bird, honey-eater so called from its note, 3020
Stitchwort, description, 4290
 lesser stitchwort, in colour, 5144
Stjernhjelm, George, Swedish poet, 4942
Stoat, or ermine, characteristics and habits, 793
 picture of animal, 789
Stock (flower), its origin, 6258
 great sea stock, in colour, 5644
 perfection stock, 6383
Stock-dove, bird, 4123; in colour, 2898
Stockholm, capital of Sweden, 5152
 famous events there, 5157
 Town Hall, 6612, 6616
 pictures, 5145, 5160-62
Stockings, plastic in making of nylon, 4010
Stockton and Darlington Railway, built in four years, 2754
 first British railway line, 3950
Stodart, M.A.: see Poetry Index
Stoddard, Richard Henry: see Poetry Index
Stoke Poges, Bucks, churchyard where Gray wrote Elegy, 2103, 6147
Stokes, Adrian, English landscape painter, 2546
Stokesay Castle, Shropshire, example of 13th-century fortress, 6235
Stolen Bell, The, story, 6823
Stolen Rope, The, story, 3014
Stomach, its work described, 2061
Stomata, what they are, 459
Stone, Nicholas, called Old Stone, English architect and stone-carver, 1928, 4786, 6241
Stone, (in geology), quarrying trade in pictures, 5850
 in comets, 3604
 road foundations, 2159

Wonder Questions

could a stone be dropped through a hole through the Earth? 3395
 how is a stone made? 4891
 where was the first house built in stone? 3165
 which is the best for building? 4016
 why does a stone not burn? 5981
 why will a hammer break it? 4894
 cutting and shaping, 5855
 quarrying, 5850-53
 ripple-marks on, 2004
 scratches made by ice in Ice Age, 2004
Stone (measure): see aovidupois weight, 7069
Stone Age, horse drawings proved accurate by cinema, 6703
 in British Isles, 6997
 traces in Egypt and Palestine, 198
 why so called, 192
 primitive drawings, 192-3
Stone bass, fish, in colour, 5098
Stone bramble, fruit, in colour, 3671
Stonechat, bird, in colour, 2900
Stonecrop, biting stonecrop, 5268, 5267
 English flower, in colour, 5643

Stone curlew: see Thick-knee
Stone-fly, giant, insect, in colour, 5713
Stonehaven, Scottish North Sea fishing port, capital of Kincardineshire, painting by David Muirhead, 2671
Stonehenge, prehistoric megalithic circles on Salisbury Plain, 5376, 6997
 views, 724, 1949
Stone humble-bee, in colour, 5714
Stone-loach, Carp family, 4979
Stone raspberry, fruit, in colour, 3671
Stonewort, grows under water, 1068
Stonyhurst College, Lancashire, arms in colour, 4989
Store that Never Grew Less, story, 4850
Stor Fiord, Norwegian inlet, 5150

STORIES

A complete classified list of stories appearing in this work begins on page 7361. Each story can also be found in the Main Index under its title
Stork, bird family, 3872
 speed of flight, 6852
 pictures of storks, 3263, 3868-9
Storksbill, flower, in colour, 5643
 seeds parachute to earth, 946
Storm, magnetic, how recorded, 362
 why is sky dull before a storm? 6104
 painting by Diaz de la Peña, 2796
 See also Weather
Storm-petrel, bird, 2900, 3999
Storthing, name of the Norwegian parliament, 6856
Stoss, Veit, German sculptor and wood carver, 4643
Stour, Kentish river, view at Fordwich, 1592
Stourbridge, famous fair, 599
Stovaine, coal-tar product, 4472
Stowe, Harriet Beecher, American novelist, 3245, 3795, 4333
 portrait, 3239
Stowe House, Buckinghamshire, 6252
 arms, in colour, 4989
Strachey, Giles Lytton, English writer, 3828
Stradiuari, Antonio, Italian maker of violins, 3558, 4794
 at work on his fiddles, 3857
Strafford, Thomas Wentworth, Earl of, English statesman, 525
Straight cladophora, seaweed, 3413
Straits Settlements, British colony, 3422
 flag, in colour, 6967
 See also Federated Malay States and Malaya
Stralsund, German port, 4310, 4424
Strand, London, what it was like in 17th century, 4226
Strang, William, Scottish portrait painter and etcher, 2668
Strangers at the Door, story, picture, 6087
Straparola, Giovanni, Italian writer of fairy tales, 399
Strap-shaped halymenia, seaweed, 3416
Strasbourg, city of Alsace, France, cathedral architecture, 5990
 sculptured tomb of Marshal Saxe in cathedral, 4646
 cathedral, west front, 5996
 scenes, 4176, 4177
Strassman, F., uranium atom split, 6317
Stratford-on-Avon, Warwickshire, 4473
 Anne Hathaway's cottage, 1085
 figure over Shakespeare's tomb, 4477
 Holy Trinity Church, 6413
 Shakespeare's Memorial Theatre, 6615
 Shakespeare's birthplace, house and schoolroom, 4477
 view of the town and river, 841
Strathcona, Lord Donald Smith, Canadian statesman, 2320
Strathnaver, electrically-driven liner, control room, 3706
Strato-cumulus, clouds, 2870
Stratosphere, what it is, 5372
Stratus cloud, what it is, 2921, 2870
Strauss, Richard, German composer, 150
 portrait, 145
Stravinsky, Igor Fedorovitch, Russian composer, 150
Straw, lifting a bottle with a straw, trick, 2117
 why we can drink through, 5200

why did the Egyptians use straw for their bricks? 3649
 why is it sometimes hung under bridges? 4894
Strawberry, fruit in the seed, 1813
 structure of, 834
 wild strawberry, 4284, 4780
 fruit, 1817, 3668
 wild, flower, 4290, 4906
Strawboard, book covers made of, 3389
Streaked gurnard, in colour, 5099
Streak-winged lightning beetle, 6336
Stream, flowers of the, 6007, 6129
 why does the stream run faster in the middle? 2862
 flowers, 6007, 6009, colour, 6129-30
Streamlined Engines, in colour, 1041-43
Streamaschaltz, see Whitby
Streetfield, Noel, English novelist, 3714
Street, see Road
Street, Arthur George, English writer, 3829
Street, George Edmund, English architect, 4230, 6609
Strength, pictures of Samson, 1486-1489
Stresemann, Herr, German statesman, worked for reconciliation with France, 4302
Stretcher, bricklayer's term, 2414
Striata, tapering, seaweed, 3414
Strike, what is it, 5640
 General strike of 1926; see 1827
 of miners in 1921; see 1826
Strindberg, Swedish balloonist, 6439
Strindberg, Johan August, Swedish realistic author, 4942
String, cut string that does not fall, trick, 3847
 notes found on a vibrating string, 6423
Stringed instruments, what was the first? 5614
Striped gopher, animal, 1030
Striped hyena, animal, 422
Striped snail, shell, 1177
Stroboscope, what it is, 1470
Stromboli, island and volcano in the Lipari Islands, Italy, 2248, 4910
 views, 2132, 4922
Strong, L. A. G., British poet and writer, 3714, 4084
Strontianite, mineral, 1304
Strontium, metallic element, 3889
Strower, Almon B., his automatic telephone system, 1971
Strudwick, J. M., his paintings, *The Golden Thread*, 3528
 Parable of the Ten Virgins, 1853
Struther, Jan, British writer, hymns, 1760
Strychnine, obtained from nux vomica seeds, 2690
Stuart, Frances, duchess of Richmond, original of Britannia on penny, 6106
Stuart, Gilbert, American portrait painter, 3286
Stuart, John McDouall, Scottish explorer in Australia, 6070
 portrait, 6063
Stuart, Muriel: see Poetry Index
Stuart Age, 4005
 times that saw a great expansion in trade and shipping, 1205
 coal begins to be used in houses and for smelting iron, 1214
Stubbs, George, English painter of horses, 2545
Stubbs, William, English historian, 3095, 3093
Studies in Contentment, essays by David Grayson, 2970
Stuffing-box, on steam engine, 3212
Stuhlweissenberg, town, Hungary, street scene, 4561
Sturgeon, fish, size and habits, 4976
 in colour, facing 5197
Sturluson, Snorri, Icelandic historian, 4938
Stursa, Jan, Czechoslovakian sculptor, 4896
Sturt, Charles, English explorer in Australia, 6066
 life saved by native, 6065
Stuttgart, capital of Wurtemberg, Germany, 4428, 6371
 castle, 6369
Styka, Jan, Polish painter, 3398
 Tolstoy, painting by, 3398
Styrax, or Benjamin tree, 2938

Styrol, oil contained in benzoin, 2933
Styx, river of Hell, 3531, 6930
Submarine, German losses during Second World War, 1945
 German use during First World War, 1710
 unrestricted warfare, 1709
Submarine cable: see Telegraph cable
Submarine garden, how to make, with picture, 2982
Subway, London's subways, 4375
 entrances at Trafalgar Square, 4374
Success, what it means, 2351
Succory: see Chicory
Sucker, how to make a leather sucker, 2238
Sucré, capital of Bolivia, 7019
Suction dredger, one at work in Suez Canal, 4875
Suction pump, how it raises water, 923
Sudan, Anglo-Egyptian territory in north-east Africa, 3316
 revolts from Egypt, 6878
 Pictures of the Sudan
 cotton-picking scene, 2561
 fishing village, 3322
 gum arabic trees, 2941
 Khartoum railway station, 3320
 Makwar dam on the Blue Nile, 5976
 map, in colour, 7098
 natives by their huts, 3322
 Omdurman grain market, 3321
 Port Sudan, quayside, 3323
 postman, 4636
Sudan, French, West African colony, 6749
 air view of Timbuctoo, 6751
 mosque at Djenne, 6757
 Negro boy, 6747
Sudd, what is the Nile's sudd? 5488
Sudra, Indian caste, 6854
Suez, Egyptian port, general view of town, 6880
Suez Canal, ship canal connecting the Mediterranean and Red Seas, 4868
 opening of, 6741
 Napoleon's plan, 1444
 value to international commerce, 6878
 at Lake Timsah, 4875
 blowing up wrecked vessel, 4875
 dredging operations, 4875
 steamship passing through, 4869
Suffolk, English eastern county, 212
 places in, 7171
Pliocene deposits, 1878
 road map, 7133
Suffolk ram, 1281
Sugar, how we get it; its importance and uses, 2311
 alcohol obtained from, 699
 Barbados' production, 3556
 British Guiana's production, 3558
 chemical production, 2312
 conditions for growth, 2621
 Fiji's production, 3426
 food importance, 2183
 formation in human body, 1932
 formation in plants, 480
 Jamaica's exports, 3554
 production in Mauritius, 3422
 saccharin's chemical difference, 1676
 why it absorbs water, 107
 why is sugar sweet? 1676
 Pictures of Sugar
 basket of crushed cane, Barbados, 3557
 cane being loaded, Australia, 2447
 cane plantation in Mexico, 2313
 crushed cane arriving at factory, Barbados, 3559
 limits of cultivation on world map, 221
 picture story, 2288-94
 sugar-beet crop, 2313
 See also plant life maps under names of countries
Suger, Abbé, early architect, 5746
Suggestion, in hypnotism, 4281
Suir, river of Munster, Ireland, railway bridge, 3071
Sukkur Dam, on the River Indus, India, irrigation in Sind, 2947
 picture, 5971
Suleiman, I., called the Magnificent, Turkish sultan, 6133
 Mosque in Istanbul, 6141
Sulgrave Manor, Northamptonshire, Washington's ancestral home, 1640
 picture of exterior, 1835

Sulla, Lucius Cornelius, Roman general and dictator, 4354; portrait, 4351
Sullivan, Sir Arthur, English composer, 150, 1266, 145
Sullivan, Louis, American architect, 6611
Sully-Prudhomme, René, François, French poet, 4458
Sulphapyridine, drug (M and B 693) used in fighting pneumonia, 2628
Sulphate of ammonia, as a fertiliser, 856
Sulphate of iron, ink made from it by ancient Egyptians, 2034
Sulphides, use of in lighting, 1299
Sulphonal, coal-tar product, 4472
Sulphur, volcanic production of, 2033
 an element, 4222
 in an egg, 5615
 in gas manufacture, 3335
 radioactive sulphur used in penicillin, 4814
 rubber vulcanised with, 1166, 2033
 picture of mineral, 1302
Sulphur-coloured trefoil, in colour, 4418
Sulphur-crested cockatoo, 3499
Sulphuric acid, composition, 4346
 Belgian industry, 5650
 specific gravity, 4954
Sulphur tyrant, bird, 3137
Sulphur-wort, what it is like, 6012
 picture of flower, 6009
Sultanabad, Khorassan, view, 6394
Sultan tit, in colour, 3142
Sulu, Borneo State ceded to Britain, 3425
Sumach, in colour, 2685
Sumatra, island of Indonesian republic, 5532
 native house, 5542
 map, in colour, 7097
 map of animals, industries, and plant life, 5540
Sumatran broad-bill, 3147
Sumbawa, Mount, Dutch East Indies, eruption (in 1815), 2248
Sumer, ancient kingdom, 6870
Sumerians, ancient Mesopotamian people, 6870
 tomb of the Sumerian Queen, 6859
Summer, why it is hot, 269, 2742
 reason for longer days, 2742
 painting by E. A. Hornel, 6197
Summer Time Act, explained, 4775
Sun, story of its power, 8109
 angle at which rays fall on Earth, 2618
 distance from Earth, 9, 2618, 2989
 does not rise and set, 266
 Earth's attraction, 4593
 energy radiated from, 2618, 3601, 5443
 facts about, 7061
 gases of the Sun, examination by spectroscopic, 3850
 heat of, 12, 2743, 3852
 how to light a match with the Sun, 2485
 in mythology, 3516
 light's effect on life, 14, 201, 333, 4809
 magnetic storms on it, 362
 movements, 1678
 origin and formation, 12, 138, 3977
 other suns, 2996, 3974
 speed in space, 2990, 3728
 telegraphing by: see Heliograph
 vertical rays at Equator, 2741
 Wonder Questions
 does the Sun move? 1678
 does the Sun put out a fire? 6602
 how can we foretell an eclipse of the Sun? 817
 is the heat of the Sun the same as the heat of a fire? 6345
 is there any water in the Sun? 2664
 is there a whiter light than that of the Sun? 1300
 what causes haloes round the Sun? 3166
 what is a day? 5121
 what is the Sun made of? 1795
 why does the air not stop its light? 4136
 why does the Moon grow brighter as the Sun sets? 5618
 why is the World light when the Sun is behind the dark clouds? 4392
 will it ever be as cold as the Earth? 5123
 will the Sun ever grow cold? 4764
 Pictures of the Sun
 Earth's tilt to Sun in summer and winter, 5121

STORIES OF THE WORLD TOLD IN THIS BOOK

THE stories in the Encyclopedia are not chosen haphazard ; they are a careful selection from the stories of all lands. Every story is indexed under its title. Here we give a list of the stories in a form which will be helpful to children and teachers.

Stories closely associated with a country are under the heading of the name of that country. Fables, legends, fairy stories, and stories of saints which today may be said to belong to all the world are classified under the headings of Fables, Legends, and so on. The stories of our own land will be found under the headings Legends, Historical Stories, and Miscellaneous Stories.

To find if there is a picture to the story, refer to the title of the story in the main index.

AFRICA

Proud King of Kamera, 534
retold in French, 4486

Stories told to Kaffir Children

Jackal and the Lion, 4969
Rope that Broke, 4969
Uncama's Adventure, 4969

ASSYRIA

Boy who Broke the Wings of the Wind, 1273

AUSTRALIA

Tale of the Barrier Reef, 5830

BELGIUM

Silver Cornet, 4241

BURMA

Tales told to Burmese Children

Birds and the Mice, 5094
Buddha and the Squirrel, 5094
Cloud that Talked, 5094
Wolf who Met a Man, 5094

CHINA

Stories told in Chinese School Books

Arrows for his Soldiers, 4854
Chariot in the Mud, 3014
Doctor who Learned to Swim, 4854
Dream and the Deer, 3014
Emperor's Taxes, 3014
Prince's Gift, 4854
Rats and the Salt, 4854
Stolen Rope, 3014
Tea that Never Came, 4854
Why the General Went Back, 3014

Stories told of Chinese Boys

Ball in the Hollow Post, 5707
Big Jar of Water, 5707
Boy Who Found Light, 5707
Boy Who Had No Paper, 5707
Hole in the Wall, 5707
Sleepy Student, 5707
Web of Cloth, 5707
Willow-pattern Plate, 35

DENMARK

Lost Prince Havelok, 4363

EGYPT

Treasure of Rhampsinitus, 3622

FABLES

Adventures of Reynard the Fox, 5219

Aesop's Fables

Ant and the Grasshopper, 3990
Apple Tree, 4246
Ass and the Dog, 4116
Ass in the Lion's Skin, 4246
Belling the Cat, 4246
Boastful Traveller, 4246
Boy Who Cried Wolf, 3866
Boys and the Frogs, 3866
Bull and the Goat, 3992
Cat, the Eagle, and the Sow, 3865
Crow and the Pitcher, 4245

Dog and the Ass, 3744

retold in French, 3993

Dog and the Shadow, 4116

Dog and the Thief, 4246

Dog and the Wolf, 3990

Dog in the Manger, 4246

Donkey's Wish, 3745

Dove and the Ant, 4246

Farmer and his Sons, 4116

Farmer and the Stork, 3744

retold in French, 3993

Fat and Lean Fowls, 3992

Fowl and the Jewel, 3992

Fox and the Cock, 3991

Fox and the Crow, 3744

Fox and the Goat, 3990

retold in French, 4117

Fox and the Lion, 3990

retold in French, 4117

Fox and the Mask, 3992

Fox and the Wolf, 3745

Frogs Who Wanted a King, 3743

Goat and the Lion, 4115

Goat and the Vine, 3866

Hare and the Tortoise, 3745

Hen and the Fox, 4115

Horse and the Ass, 3744

retold in French, 4117

Jupiter and the Ass, 3990

retold in French, 4117

Lark and her Young Ones, 3866

Lawyer and the Pears, 3745

retold in French, 3867

Lion and the Bull, 3992

Lion and the Bulls, 4115

Lion and the Deer, 3992

Man and his Negro Servant, 3865

Man and the Forest, 4115

Man and the Partridge, 3866

Man Who Gave Up Singing, 3744

Old Hound, 4116

Proud Frog, 3743

retold in French, 3867

Snake and the File, 3992

Sour Grapes, 4116

Stag in the Ox-Stall, 3865

Stag Looking into the Water, 3743

retold in French, 3993

Stag with One Eye, 3991

Thieves and the Cock, 4245

Town and Country Mouse, 3991

Travellers and the Axe, 4245

Two Cocks, 3990

Two Frogs, 4115

Vain Jackdaw, 3744

retold in French, 3993

Villager and the Viper, 3866

Wind and the Sun, 4245

Wolf and the Kid, 4116

Wolf and the Kid, 3866

retold in French, 4117

Wolf and the Lamb, 3991

Wolf and the Stork, 3743

retold in French, 3867

Wolf in Sheep's Clothing, 3992

Woman and the Hen, 4246

Bear in the Well, 3494

Blue Jackal, 5218

Cock-a-Doodle-Do, 4973

Crane and the Wise Crab, 3251

retold in French, 6446

Crocodile and the Monkey, 4359

Bunny Rabbit and the Lion, 154

Eglantine and the Myosote, 1028

Elephants and the Moon, 4240

Fox and the Faithful Horse, 2268

retold in French, 6569

Fox without a Tail, 4848

How Mr. Cat became King, 411

How the Wren became King, 1890

retold in French, 5342

Hungry Fox and the Kitten, 154

Lessing's Fables

Ass with a Sore Foot, 3624

Boastful Italian, 3624

Fox and his Skin, 3624

Goose that was only a Goose, 3624

Knight on the Chessboard, 3624

Shepherd and the Nightingale, 3624

Why the Wolf was Brave, 3624

Wolf Who Repented, 3624

Lord of the Lions, 2017

Ostrich and its Critics, 3623

Pilpay's Fables

Adder in a Burning Bush, 6934

Falcon and the Hen, 6934

Four Friends, 6933

Fox and the Hen, 6933

Iron-eating Rats, 6933

King Who Grew Kind, 6934

Man Who Waited to be Fed, 6934

Three Fishes, 6933

Three Little Pigs, 28

Traveller and the Heron, 4611

Why the Tiger has Marks on his Face, 4611

Wise and Foolish Fairies, 3740

FAIRY TALES

Aladdin and the Wonderful Lamp, 1651

Ali Baba and the Forty Thieves, 283

Babes in the Wood, 1519

retold in French, 3623

Beauty and the Beast, 151

Bird with the Golden Wings, 1396

Boy Fiddler of Sicily, 287

Brownie of Snafell, 2020

Cinderella, 1761

Cobbler and the Elves, 662

Discontented Fir Tree, 4731

Emperor's Nightingale, 6073

Enchanted Horse, 1271

Enchanted Kettle, 6681

Fairy Maid of Van Lake, 2631

retold in French, 3496

Fairy's Revenge, 2386

STORIES, LEGENDS, AND FABLES FROM

Fairy Tales—continued

Giant with Three Golden Hairs, 2509
Hansel and Gretel, 3617
Hop-o'-My-Thumb, 5089
Jack Frost Opens the Chestnut Burrs, 5833
Jack the Giant Killer, 655
King of Leinster's Story-teller, 1394
Knight and the Wonderful Stone, 784
 retold in French, 5342
Land of Great Delight, 1148
Land of Red Daisies, 6447
Little Pixies of Land's End, 1523
Little Red Riding Hood, 899
Little Wooden Box, 4242
Lonely Woman of Morocco, 1392
 retold in French, 4362
Mad Tea-Party, 6076
Magic Carpet, 3133
Magic Tinder-Box, 3007
Mona and the Forsaken Mermaid, 1891
Mother Nature's Spring Helpers, 5833
Poet, Goblin, and Donkey, 3374
Princess who Became a Goose Girl, 1027
Puss in Boots, 1145
Rapunzel's Golden Ladder, 3132
Rum-pel-stilt-skin, 30
Shepherdess and the Sweep, 5831
Silent Princess, 4239
Silkie Wife of the Shetland Isles, 1393
Sindbad the Sailor, 2385
Sleeping Beauty, 4614
Snow White and the Dwarfs, 5703
Store that Never Grew Less, 4850
Three Bears, 661
Tiny Thumbeline, 5463
Tom Thumb, 783
Tweedledum and Tweedledee, 6323
Twelve Dancing Princesses, 2139
Ugly Duckling, 3493
Vase from the Arabian Sea, 1888
Witch's Ring, 412

FRANCE

Boy and the Ambassador, 6690
Boy Who Saved his Family, 6196
Brave French Maid of Noyon, 6931
Brave Little Dog of the Wood, 3621
Heroes of the Lighthouse, 6195
Jeanne Parelle, 4970
Love Laughs at Locksmiths, 34
 retold in French, 4244
Man Who Saved His Son, 6932
Molière's Plays
 Doctor in Spite of Himself, 4965
 Imaginary Invalid, 3373
 Ready-Made Gentleman, 6079
 Tricks of Scapin, 5215
Queen Who Gave up her Boy, 6682
Stories told by Victor Hugo
 Dog That Became an Angel, 2015
 Good Flea and the Bad King, 2015
Wolf that Came in the Night, 5958
 retold in French, 6081

STORIES IN FRENCH

Aesop's Fables

Dog and the Ass, 3993
Farmer and the Stork, 3993
Fox and the Goat, 4117
Fox and the Lion, 4117
Horse and the Ass, 4117
Jupiter and the Ass, 4117
Lawyer and the Pears, 3867
Proud Frog, 3867
Stag Looking into the Water, 3993
Vain Jackdaw, 3993
Wolf and the Kid, 4117
Wolf and the Stork, 3867
Babes in the Wood, 3623
Bank of England Crossing-sweeper, 5828
Cat and the Parrot, 3746
Chrysanthemum-Old-Man, 6195
Crane and the Wise Crab, 6446
Damon and Pythias, 6814
Emperor and the Figs, 5708
Fairy Maid of Van Lake, 3496
Fox and the Faithful Horse, 6569
Geese that Kept Guard Over Rome, 4853

How a Sultan Found an Honest Man, 4968
How Gotham Got a Bad Name, 3251
How Rabbit Made His Fortune, 6322
How the Thief was Found Out, 4733
How the Wren Became King, 5342
King Who Came to Cashmere, 5582
Knight and the Wonderful Stone, 5342
Lonely Woman of Morocco, 4362
Love Laughs at Locksmiths, 4244
Luck of Simple Jack, 5466
Man Who Did Not Forget, 5953
Proud King of Kamera, 4486
She Who Would Die for her Friend, 6682
Wandering Jew, 4612
Wolf that Came in the Night, 6081

GERMANY

Bauldour the Beautiful, 6564
Brave Maid of the Mill, 6448
Hewglass, the Merry Jester
 Dinner at the Castle, 3864
 Five Great Questions, 3864
 Wonderful Horse, 3864
Rosy Apple, 2141
Spring of Saint Boniface, 5958
Undine of the Lake, 6570

GESTA ROMANORUM

Alexander and the Pirate, 156
Conqueror's Triumph, 156
Dogs that Became Friends, 156
Guests at the Feast, 156

GREECE

Althaea and the Burning Brand, 6813
Arachne and her Tapestry, 6938
Arión and His Golden Harp, 5333
Bellerophon and the Winged Horse, 6821
Conqueror and the Artist, 3370
Daedalus and his Son Icarus, 6939
Dream of Pygmalion, 2890
Echo and Narcissus, 6823
Face No Man Could Look On, 4967
How Music Made Peace, 4964
How the Peacock Came into the World, 4484
How They Crossed the River, 3370
King Midas, 27
Laomedon, Breaker of Promises, 6692
Love Story of the World, 5579
Master and his Scholars, 3370
Men Who Chose their Lives, 6693
Noble Alcestis, 6937
Oedipus and Sad Antigone, 6691
Orpheus and Eurydice, 6929
Prince Who Became a Grasshopper, 6938
Sham Immortal, 6930
Soldier and his Judge, 3370
Strangers at the Door, 5087
Traitor Who Became Loyal, 3370
Triptolemus, 6819
Two Friends, 3370
Twelve Labours of Hercules, 6325
Wasps, 6819
Why the Cornfields Smile, 4362

HAWAII

Heroine of the Southern Seas, 5827
How the Moon Came to Hawaii, 6807

HISTORICAL

Admiral's Breeches, 2142
Androcles and the Lion, 155
Antonio's Wonderful Lion, 5466
Baby Who Could Not be Lost, 6814
Bodrugan's Leap, 1524
Boy Who Climbed the Fortress, 2265
Brave Grizel Hume, 5217
Burgomaster and the Lion, 3247
Climb up the Capitol Hill, 5468
Damon and Pythias, 4365
 retold in French, 6814
Father and Son, 6568
Fellow by the Name of Rowan, 6949
Geese that Kept Guard over Rome, 4737
 retold in French, 4853
Godwin the Peasant Boy, 5587

Grace Darling, 4849
Harriet Tubman, 4485
Heroine of Nottingham Castle, 6808
Holbrook of the Dardanelles, 6574
How Alban Gave up his Life, 2511
Jack Cornwell, 6196
Kate Barlass of the Broken Arm, 6952
Lad Who Slept at his Post, 5216
Lady Agnes of St. Dunstan's Tower, 2760
Last Fight in the Colosseum, 1393
Lord of Charlecote Manor, 2629
Man who Died for Maximilian, 4609
Man who Refused a Bribe, 5951
March of the Ten Thousand, 1889
Men of the Birkenhead, 5342
Michael Goes Climbing, 2889
Race from Marathon, 5088
Roland Falls at Roncesvalles, 1025
She Who Would Die for her Friend, 3134; retold in French, 6682
Song that Found a King, 1647
Story of Edith Cavell, 6686
Village of Heroes, 2020
Woman against a King, 5954
Women of Stanley Harbour, 5582
Youth of Hereward the Wake, 4735

HOLLAND

Cargo of Wheat, 285
Leak in the Dyke, 6936

HUNGARY

Flood Boatman of Budapest, 3371
Honest Shepherd of the King, 5829
Man in a Monk's Habit, 3135
Man who Drove Downstairs, 4243

INDIA

Brahmin and the Dagger, 3369
Brahmin and the Pots, 5218
Finest Thing in the World, 5955
First Lesson, 1890
Four Wise Ministers, 4114
Friend of the Withered Tree, 532
Hare and the Hungry Man, 900
Hundred Thousand Monkeys, 4963
King Indeed, 660
King who Came to Cashmere, 904
 retold in French, 5582
King's Old Friend, 4612
Monkeys' Bridge, 659
Old Man of the Pit, 409
Slave Boy of Lahore, 6574
Stories told by the Buddha
 Monkey and the Peas, 4738
 Otters and the Jackal, 4738
Stories told in India 3000 Years Ago
 Ape and the Wedge, 3495
 Brahmin and the Goat, 3495
 Crows and the Ankle, 3495
 Lion and the Cat, 3495
 Tiger and the Traveller, 3495
 Tiger that Came in the Night, 4358
 Tiger Woman of the Jungle, 782

IRELAND

Brown Bull of Ulster, 1275
Death of Conor, 3863
Doom of the Children of Lir, 6687
Enchanted Fawn, 2383
Hound at the Gate, 5469
How Chulain Crossed the Bridge, 5585
In the Strange House, 533
Oisín Returns from Fairyland, 5226
Voyage of Macdune, 6567

ITALY

Boy Who Wrote to the Pope, 5468
How the Children Saved the Town, 6569
Peasant at the Flood, 6445

JAPAN

Chrysanthemum-Old-Man, 3496
 retold in French, 6195
Girl in the Rice Field, 2757
Girl Who Kept Dry in the Rain, 2384
Hoori the Fisherman, 4357
Idol and the Whale, 410
Japanese Sparrow, 6686

MANY LANDS, AND WHERE TO FIND THEM

Jellyfish in Search of a Monkey, 36
 Knight's Ten Thousand Jewels, 415
 Man Who Made Trees to Blossom, 904
 Midnight Horse, 1766
 Moon Maid, 1512
 My Lord Bag-of-Rice, 6822
 Mysterious Portrait, 2759
 Phantom Cats, 6951
 Raiko and the Goblin, 3131
 Son-of-a-Peach, 6689
 Stolen Bell, 6823
 Stranger in the Cottage, 3372
 Three Japanese Mirrors, 6319
 Two Daughters of Japan, 6952
 Up the Enchanted Mountain, 1147

LEGENDS

Angel of the Dimples, 532

Charlemagne Legends

Emperor's Dinner, 6817
 How Rinaldo Conquered Bayard, 6818
 How Roland Got his Coat-of-Arms, 6817
 Roland defeats the Giant, 6817
 Roland for an Oliver, 6817
 Waters of Oblivion, 6818
 Child Roland to the Dark Tower Came, 2514
 Dick Whittington and his Cat, 33

Flower Legends

Children of the Sky, 6813
 Chrysanthemum, 4734
 Fanny, 4734
 Rose, 4734
 Rose of Jericho, 4734
 Why the Convolvulus Twines, 4734
 Gamelyn the Terrible, 3739
 Gelert, the Faithful Dog, 2888
 Gog and Magog, 4244
 Green Knight, 2885
 How Gotham got a Bad Name, 662
 retold in French, 3251
 Invention of Medicine, 6954
 Justice is Best, 1767

King Arthur Stories

Coming of Arthur, 6941
 End of the Knights, 6944
 Excalibur, 6941
 King Arthur's Riddle, 6815
 Passing of Arthur, 6943
 Quest of the Holy Grail, 6942
 Round Table, 6942
 Treachery of Vivien and Morgan Le Fay, 6943
 Little Prince Horn, 1150

Places and Things

Enchanted Tulip, 4487
 Fairy Tulips, 1524
 Giant of the Peak, 1524
 St. Vincent's Rocks, 1524
 Ring of Great Stones, 4737
 Robin Hood and His Merry Men, 3365
 Saint George and the Dragon, 781
 Sir Orfeo of Winchester, 4360
 Soul of Countess Cathleen, 3249

Star Legends

Family Group, 5589
 Great Bear, 5590
 Great Dog, 5589
 Hercules With His Club, 5589
 Indian legend, 5589
 Orion, the Belted Giant, 5590
 Pleiades, 5590

Town and Country

Biddenden Maids, 1149
 Chest of Caller Pit, 1149
 Man in the Moon, 1149
 St. Keyne's Well, 1149
 Wandering Jew, 1272
 retold in French, 4612
 Wandering Shepherdess, 414
 William Cloudslee, 1391
 See also under names of Countries in this list

MISCELLANEOUS STORIES

Bank of England Crossing Sweeper, 2886; retold in French, 5828

Biddy and the Candle, 6321
 Boy Who Saved a Crew, 6081
 Boy Who Slept Well O'Nights, 6685
 Brave Apprentice, 5586
 Brave Diver of Tor Bay, 6935
 Child Trusted with State Secrets, 5706
 Child Who Came by Night, 4971
 Dog That Did its Duty, 6932
 Emperor's New Clothes, 3987
 Girl Who Walked to London, 5334
 Heroine of the Storm, 6572
 How a Sultan Found an Honest Man, 36; retold in French, 4968
 How Margaret Wilson Gave up Her Life, 3012
 John Maynard, Pilot, 6694
 King's Watchers, 3009
 Knights and the Shield, 286
 Lawyer and the Oyster, 1762
 Little Brown-Paper Parcel, 6326
 Little Goody Twoshoes, 407
 Little Richard's Ride, 5465
 Little Spinner at the Window, 5705
 Luck of Simple Jack, 1146
 retold in French, 3466
 Man in the Engine Room, 6822
 Man Who Did Not Forget, 657
 retold in French, 5953
 Man Who Thought of Comrades, 6322
 Only One Thing To Do, 6566
 Pedlar of Swaffham, 413
 Poacher's Silence, 6940
 Punch and Judy, 288
 Race for the Lifeboat, 6193
 Rich Man Who Lost His Appetite, 1768
 Rich Man's Diamond, 3742
 Rich Villain, 6573
 Rogue and the King, 2018
 Sister Dora and Toilers of Walsall, 6824
 Stewardess of the Stella, 6446
 Story of the Days, 5221
 Story of the Months, 5335
 Story that Had No End, 535
 Three Cups of Cold Water, 6931
 Treasure and Where it Lay, 6080
 Trying to Please Everybody, 157
 Wedding Feast, 1274

NORWAY

Snow-daughter, 414

NORTH AMERICA

Boy Who Saved the Hamlet, 5581
 Girl Who Held the Fort, 6936
 Good Samaritans of the Desert, 5957
 How the Train was Saved, 6820
 Race With the Flood, 6952
 Red Indian Stories: see that title
 Story of Rip Van Winkle, 4851
 Tales of Uncle Remus, 5583

NORTHERN MYTHOLOGY

Beowulf, 1765
 Binding of the Monster, 1274
 How the Sea became Salt, 5091
 Iduna and the Golden Apples, 2887
 Thirteenth Man, 534
 Two Brothers, 2266
 Viking and His Enchanted Ship, 2143

PERSIA

Coming of Rustem, 902
 Heavy Bags of Gold, 3741
 How Arshad Served his Master, 5952
 How Rustem Met his Son, 5092
 King Who Was Loved, 4966
 Man Who Went Through Fire, 6194
 Nouredin and the Wonderful Persian, 5225
 Shepherd's Hoard, 158

POLAND

Pompous Officer, 4853
 Spirit King, 4486
 Stories They Tell in Poland
 Clever Dog, 4366
 Dogs, Cats, and Mice, 6684
 How Highlander Chose his Wife, 6683
 Legend of the Goldfinch, 6683
 Patriot, 4366

Polish Robin Hood, 4366
 Secret of the Fern Blossom, 6684
 Virginia Creeper, 6683

PREHISTORIC STORIES

First Axe, 1521
 First Men in England, 1763
 How Rindar Brought the Reindeer Home, 3010
 When the Fire Went Out, 2761

PROVERB STORIES

Bag of Peas, 289
 Farmer and his Sacks, 289
 Two Kings, 289

RED INDIAN STORIES

Bear Man, 3248
 Blue Jay, 6953
 Boy Who Might Not Go West, 782
 Boy Who Served His Tribe, 5828
 How Rabbit Made His Fortune, 3989
 retold in French, 6322
 Itcinike the Boaster, 4974
 Little Beaver, 4113
 Nekumonta, 6563
 Rabbit Sets a Snare, 2758
 Sits-by-the-Door, 6939
 Tale a Baby Tells, 780

RUMANIA

Stefan of Rumania, 6194

RUSSIA

Girl Who Saw the Tsar, 5708
 Race with the Wolves, 6075

SAINTS AND THEIR STORIES

Boy Who Fled from Rome, 6812
 Cecilia the Sweet Singer, 6810
 Giant Who Carried the Poor, 6810
 Girl Who Defied an Emperor, 6811
 John of the Golden Voice, 6811
 Little Poor Man of Assisi, 6809
 Martyr Girl of Sicily, 6812
 Patron Saint of Shoemakers, 6800
 Santa Claus, 6809
 Ursula and the Ten Thousand Maidens, 6812

SERBIA

Animal Friends, 3252
 Honest Youth, 4847
 Man From the Other World, 1520
 Man Who Kept His Word, 2267
 Man With a Hundred Sons, 901
 Milosh Rides With the Tsar, 1023
 Nonsense from Serbia, 2632
 Prince Maximus, 1887
 Sharatz, the Wonderful Horse, 4610
 Three Poor Men, 1652

SICILY

King's Night of Terror, 31

SPAIN

Minstrel Queen of Spain, 1024

SWITZERLAND

William Tell, 529

SYRIA

How the Thief Was Found Out, 415
 retold in French, 4733

TALMUD STORIES

Dinner at the Inn, 2634
 Emperor and the Figs, 2634
 retold in French, 5708
 Heir and the Will, 2634

TIROL

Boy Who Kept Back an Army, 6951
 Tirolean Flax Grower, 4483

TURKEY

Hero of Kavala, 6685

WALES

Magic Cauldron, 3994

Pictures of the Sun

[Continued from page 7360]

eclipse, showing corona and prominences, 3110
 facing Earth in summer and winter, 265
 fiery surface, in colour, facing 3109
 flames bursting out, 3111
 map of future eclipses, 816
 midnight Sun in Norway, 2743
 path of Earth round, 3477
 path of planets round, 15
 paths of Earth and comet round, 3601
 planets' distance from, 17
 prominence photographed, 3111
 size compared with Antares, 6971
 size compared with Earth and Betelgeuse, 3849
 size compared with planets, 3177
 surface photographed, 3112
 worship in olden times, 5220
 why seen after setting, 5935
 See also Sunspot
Sun and planet crank motion, 6351
Sun bath, what it is and its use, 1429
Sun bird, distribution and habits, 3020
 species, in colour, 3262
Sun bittorn, characteristics, 3874
 pictures, 2641, 3144
Sunday, origin of the name, with picture, 5220
Sunday schools, who started? 5983
Sundew, insects for food, 204, 586, 5887
 round-leaved sundew, 578, 5891
Sun-dial, child looking at, in colour, 8
Sunfish, in colour, 5100
Sunflower, varieties, 6383, 6384
Sunga, African cattle, 1155
Sunium, headland of Attica, bronze mirror from, 6985
 Temple of Neptune, 5510
Sunlight, can we store it? 6347
Sunni, Moslem sect, 6390
Sunset, what makes the colours? 5615
Sunshine, effect on colour, 2302
Sunspot, position on Sun, 3112
 influence on Earth, 362, 6943
 as seen through telescope, 3115
 photographed at intervals, 3109
Sun spurge, in colour, 4661
Sun Yat-sen, Dr., Chinese statesman, 6504
Superb fruit pigeon, in colour, 3141
Superb tanager, 2893
Superheater, at gasworks, 3451
Superior, Lake, greatest fresh-water lake in the world, 2494, 2497
Superstition, in ancient Egypt, 543
Supply and Demand, governs price, 5513
Supra-renal gland, its uses, 3175
Surajah Dowlah, defeated by Clive at Plassey, 2946
Surat, first British settlement in India. on the Tapti, 2945, 4125
Surd, meaning of, 4265
Surface tension, explanation, 311
Surgery, great surgeons, 2501, 2623
Surinam, Dutch Guiana, 5531
Surinam toad, 4744, 4743
Surmullet, fish, in colour, 5098
Surrealism, as applied in Art, 3046
Surrey, English southern county, places in, 7172; road map, 7113
Surrey, Earl of: see Poetry Index
Sur-Tax, what it is, 4659
Surveying, work described, 4388
 party at work on Scaffell Pike, 4389
Survival of the fittest, meaning of the term, 1551
Susa, ancient Elamite capital, 5377, 6388
Suslik, habits and homes, 1030, 1031
Suspension bridge, at Clifton, 548
 how can thin iron rods carry a suspension bridge? 1183
Susquehanna River, bridge at Rockville, 3803
Sussex, English county, places in, 7172
 road map, 7115
 windmills on downs, 1591
Sutherland Falls, New Zealand, 2500
Sutherland, Graham, British painter, 2678
Sutton Hoo, Suffolk, excavation of an Anglo-Saxon burial ship at, 6859, 6993
 buckle, clasp, and purse-lid found at 6990
Sutton Place, near Guildford 6247

Suva, capital of Fiji Islands, 3426, 3435
Government Buildings, 3433
Suweideh, Jebel Druse, Syria, 6270
Svalbard: see Spitsbergen
Sverdlovsk, Russia, Lenin Square, 6029
Sverdrup, Otto, Norwegian Arctic explorer, 6438
 on board the Fram, 6437
Swaffham, Pedlar of, story, 413
Swainson's lorikeet, or lorikeet, 3498
 bird, in colour, 3142
Swaish, F. G., his painting, Building of Bristol Keep, 3151
Swallow, characteristics, 3140
 migration, 2642, 3138
 speed of flight, 6852
 cliff swallow, in colour, 3143
 route of migration, 223
 young birds in nest, 3139
Swallow hole, in geology, 726
Swallowing, how we swallow, 1320
Swallow tail butterfly, egg, caterpillar, and chrysalis, in colour, 6207
Swammerdam, Jan, Dutch scientist and microscopist, 1884
Swamp dogwood, winged seeds, 947
Swan, John, English animal sculptor and painter, 2677, 4768
 his painting, Orpheus, 3527
Swan, Sir Joseph Wilson, English scientist, 1098, 5332
 artificial silk pioneer, 4105, 5364
 portraits, 4102, 5323
Swan, species and characteristics, 3751
 how to make a swan from an apple, with picture, 1866
 route of migration, 223
 specimens, 3747, 3752-3; in colour, 2765
Swan, Hunter, & Wigham Richardson, Wallsend shipbuilders, 4104
Swan, River, Western Australian river, 2580
Swan mussel, 6577
Swansea, port in Glamorganshire, arms, in colour, 4991
Mumbles Lighthouse, 1460
Swastika, where does it come from? 6227
Swaziland, High Commission Territory in Africa, 3312
Sweat gland, its importance, 1432
 greatly magnified, 1431
Sweden, kingdom of northern Europe, 5151
 art of Sweden, 3398
 history, 5145
 literature, 4942
 salt deprivation once an alternative to capital punishment, 1540
Pictures of Sweden
 flags, in colour, 6975
 life of the people, 5147
 locks on Gota Canal at Trollhatten, 4878
 railway engine, 3511
 scenes from city and country, 5145, 5160-61
 Stockholm, Town Hall, 6616
 village school, 5152
Maps of Sweden
 general and political, 5155
 in colour, 7086
 physical features, 5156
 showing historical events, 5157
Swedenborg, Emanuel, Swedish philosopher and theosophist, 4938, 4937
Swede turnip, in New Zealand, 2705
Sweetbread: see Pancreas
Sweetbread mushroom, 3411
Sweet briar, what it is like, 5267
 flower, in colour, 5393
 fruit, in colour, 3665
Sweet chestnut: see Spanish chestnut
Sweet cicely, what it is like, 5520
 flower, in colour, 5642
Sweet laminaria, seaweed, 3416
Sweet pea, 6258, 6379
Sweet potato, plant, in colour, 2685
Sweets, how to make, 1742
Sweet-scented orchis, flower, 5267
 in colour, 5393
Sweet-scented vernal grass, 3310
Sweet violet, in colour, 4287
Sweet woodruff, flower, in colour, 4906
Swietenia: see Mahogany
Swift, Jonathan, Dean of St. Patrick's, Dublin, Irish satirist, 1729

on corn-growing, 1572
 with Stella, 1729
Swift, bird, habits and species, 3259
 speed of flight, 6852
 in colour, 3024
 nest and eggs, 2635
 on its nest, 3253
Swimming, how to swim and dive, with picture, 5191
 how to stay under water as long as possible, 1322
 why do we rise to the surface when we dive? 5618
 why is it easier to swim in salt water? 6720
Swinburne, Algernon Charles, English poet and essayist, 4078; portrait, 4077
 See also Poetry Index
Swine: see Pig
Swing, how to make one of matches, with picture, 5686
Swing-bridge, apparatus which moves it, 4881
Swiss, why do the Swiss speak three languages? 5245
Switchboard, for control of electricity, 611, 1353
Switzerland, European federal republic, 4665
 art of Switzerland, 3398
 glaciers, 2250
Pictures of Switzerland

Basle, office buildings, 6616
 flag, in colour, 6975
 forest on slopes of Alps, 2374
 Maloja Pass, 2130
 postman on skis, 4636
 various scenes, 4665-75
 viaduct across Sitter Valley, 552

Maps of Switzerland

general and political, 4678
 in colour, 7085
 physical features, 4676
 showing historical events, 4677
Swivel shackle, 6352
Sword, made in Damascus, 6270
 what was the sword of Damocles? 3392
 iron sword of Romans, 723
Sword-fish, where found and characteristics, 5230
Swynnerton, Anne, English artist, 2678
Sycamore, 3542, 3788
 fruit, in colour, 3666
 leaf's nine stages in development, 331
 tree, leaves and flowers, 3909
Sychar, view, 3466
Sychophant calosoma, beetle, in colour, 6335
Sydney, city and seaport of Australia, 2572
 bridge across harbour, 553, 2579
 harbour, 2443
 office buildings, 6616
 surf riding at Bondi Beach, 2580
Symbols: see Signs, 7073
Symington, William, Scottish engineer, 3214, 3734
 portrait, 3733
 steamboat built by him, 3735
Symer, Robert, electrical pioneer, 236, 5327
Symonds, John Addington: see Poetry Index
Symond's Yat, view on River Wye, 1713
Symons, Arthur, English poet, 4081
 See also Poetry Index
Sympathy, meaning of, 4281
 sculpture by Adda Bonfils, 5255
Synchromesh gear-box, of motor-car, how it works, 4328
Synchronome system, explained, with diagram, 975
Syracuse, once the most important Greek city in Sicily, catacombs, 444
 Archimedes at its defence, 6803
 medal 2500 years old, 71
Syria, country of Western Asia, 6270
 ancient art, 443, 448
 ancient name, 4994
 and Security Council of Uno, 6480
 history revealed by excavation, 6987
 rise of the kingdom, 890
 Bedouin sheik of, 6263
 flag, in colour, 6975
 Roman temple of Baal, 5511
 scenes and people, 6271

temple of Bacchus at Baalbek, 5512
women with distaffs, 233

Maps of Syria

general and political, 6400
ancient, and modern, in colour, 7093
Syrinx, mythological nymph, 3530
Syssphinx molina, of Central America, caterpillar, in colour, 6210
Szczecin, or Stettin, industrial town of Poland, 4311, 5031
scene, 5038

Szechwan, Chinese province, 6500, 6501
Szillard, in Hungarian story, 3135
Szymanowski, Polish musician, 5029

T

Taal, Dutch dialect spoken in parts of South Africa, 3187

Tabard Inn, Southwark, starting-place of the Canterbury Tales pilgrims, 364

Tabb, John Banister: see Poetry Index

Table, how to make a table from a cheese box, with pictures, 1744

Table Bay, South African bay on which Cape Town stands, 3554

Table-cloth, what is the table-cloth at Cape Town? 5371

Table fork, its story, 2909
picture-story of manufacture, 2909, 2912-13

Table knife, its story, 2909
picture story of manufacture, 2909-11

Table runner, how to make one in appliqué work, with pictures, 1121

Table Tennis, how to play, with picture, 5069

Table-top, problem of the circular table-top, with picture, 5066, 5194
Tablets, Babylonians wrote on clay tablets, 2034

Tabor, Mount, Palestine, view, 3470
Tabriz, trade centre of Persia, 6386
view from air, 6393

Tachina, broad, insect, in colour, 5714
Tacitus, Cornelius, Roman historian, 5432

portrait, 5425

Tacking (ship), what is meant by, 3277

Tacoma, town, Washington State, general view, 3805

Taddeo, Bartoli: see Bartoli Taddeo

Tadpole, development from egg to frog, 452, 4740

does it know it will lose its tail? 5006
where does its tail go? 60

mouth under microscope, 1911

Tadzhikistan, republic of U.S.S.R., 6014
map, 5904

Tagore, Rabindranath, Indian poet, 4206, 5674

Taguan flying opossum, 2390

Tagus, river of Spain and Portugal, 5270, 5402

Tahiti, largest of the French Society Islands in the Pacific, 2380

Tahr, goat-like animal of Himalayas, 1288, 1281

Tail, Man has single small bone instead of, 1568

Taillefer, minstrel who led Normans to victory at battle of Hastings, 717

Tailor ant: see Spinning ant

Tailor's thimble, why has it no top? 5252

Taine, Hippolyte Adolphe, French historian, 4458

Tairé: see Dairen

Taiwan: see Formosa

Tajewala, India, dam, 5971

Taj Mahal, tomb, Agra, architectural merits, 5628, 2311

mosaic work, 6732
story, 2944

pictures, 2815, 2955, 5633

Takamino, Japanese chemist, adrenalin discovered by, 4472

Take my life and let it be, hymn by Frances Ridley Havergal, 1753

Takin, mammal, home of: London Zoo's specimen, 1286, 1282

Taking Silk, term implying promotion from barrister to King's Counsel, 4777

Takoradi, modern port of the Gold Coast, 3318

Talbot, apothecary afterwards knighted by Charles II, cures effected by quinine, 2684

Talbot, William Fox, English pioneer of photography, 4749

his work in deciphering cuneiform writing, 6869

Talc, mineral, 1303

Tale, a Baby Tells, The, story, 780

Talenti, Simone di Francesco, Italian architect, work on Florence Cathedral, 5992

Tale of a Tub, Swift's satire, 1730

Tale of the Barrier Reef, A, 5830

Tales of Uncle Remus, 5583

Talitrus locusta, sandhopper, 5480

Talking, can flowers talk? 2418
do animals talk to one another? 310
how did men learn to talk? 6225
who began talking? 921
why can't a baby talk when born? 6600

See also Speech

Talking Film: see Cinema

Talking machine: see Gramophone

Tall fescue grass, 3309

Tallinn, or Reval, capital of Estonia, 6016

general view, 6030
old town gate, 6030

Tallis, Thomas, English composer, 142
listening to the playing of Byrd, 149

Tall oat grass, seeds produced by, 3306

Talmud, The, Hebrew religious exposition, 5677

stories from: Heir and the Will; Dinner at the Inn; Emperor and the Figs, 2634

Talos, killed by Daedalus, 6939

Tama-Dare Waterfall, Japan, 2500

Tamandua, lesser ant-eater, 2275

Tamarao, dwarf buffalo, 1156

Tamarisk, what it is like, 5764
flower, in colour, 5643

Tamarugal desert, South America, 2375

Tamatave, town in Madagascar, scene, 6764

Tamerlane, or Timur, Mongol conqueror, 6390, 6503

Tamil, people of Southern India and Ceylon, 2072

Taming of the Shrew, The, story of Shakespeare's play, 6044

Tampico, important oil port of Mexico, view, 7012

Tanager, bird, species, 2896
black-lored red, in colour, 3261
blue tanager, 2893

paradise, in colour, 3264
red-necked, in colour, 3141

scarlet, in colour, 3143
superb, 2893

Tanagra, buried city of ancient Greece, statuettes found at, 324, 4026

terraccotta sculpture from, 4030

Tanganyika, Lake, Africa, 3004, 3006

Tanganyika Territory, formerly German East Africa, British mandatory State, 3314

Dar-es-Salaam, 3321, 3323
flag, in colour, 6968

Kilimanjaro mountain, 3324
map, in colour, 7099

maps, industrial and physical, 3196-98

Tangier, Moroccan port, 6749, 6761

Tanis, ancient Egyptian city, site was discovered by Professor Petrie, 6867

Tank, British introduce into war in 1916: see 1708

Tanker, ship for carrying oil, 2968, 3092

Tank wagons, railway, for carrying oil, 3022

Tannahil, Robert: see Poetry Index

Tannin, obtained from bark of eucalyptus tree, 2683

obtained from bark of mangrove, 3056
obtained from Venetian sumach, 2940

tea contains, 1679
use in leather tanning, 3155

Tanning, microbes used in process, 698
trade detested by Jews, 6172

See also Leather

Tannu-Tuva, Central Asia, autonomous republic of the U.S.S.R., 6013, 6500, 6511

Tannymorel, Australia, colliery, 2455

Tansy, flower, in colour, 4288

Tanta, town of Egypt, 6873

Tantalum, melting point, 7073

Tantalus, in Greek mythology, 6930

Taoism, Lao-tze founds doctrine, 5030, 6503

Taormina, Sicily, mountains, 4923
Roman theatre, 6990

Tape-Measure Tidy, how to make, with picture, 6176

Tapestry, art of weaving pictures, 6738
frame for weaving shown on early Greek vase, 6738

Gobelins and Beauvais tapestries, 1684, 3556, 6738

Bayeux Tapestry, in colour, 709-716

Burne-Jones's King Arthur and his Knights, 6946

design by William Morris, 6731
Gobelins design, 6736

Tapia, obtained from manioc, 1436

Tapir, mammal, 1769, 1771

Tar, extraction from coal, 3451

product in gas manufacture, 3335

Tara Hill, county Meath, Ireland, place of great historical interest, 2785, 3062

Tarantula, spider family, 5598, 5593

Tardigrada, creature which can live without food, 3279

Tarik, Saracen general, invader of Spain, in the 8th century, 5272

Tarim, River, Central Asia, 6510

Tarkington, Newton Booth, American writer, 4334

portrait, 4331

Tarpeian rock, what was the Tarpeian rock? 4520

Tarquinius, Brutus drives out Roman tyrant, 4350

Tarragona, Spanish port, Roman aqueduct, 5284

Tarshish, ancient Phoenicia, 2855

Tarsier, animal, characteristics, 166

Tarsus, ancient city of Cilicia, 5679

Tartars, lichen used as food, 1440

Poland's defence against, 5026

retreat across Asia by camels, 1533

Russia invaded by, 5893

Tartarus, mythological underworld kingdom, 5531

Taris, how to make, 1492

Tashi Lhunpo, Tibetan monastery, 6512

Task, The, Cowper's poem, published in 1785: see page 2104

Tasman, Abel Janszoon, Dutch navigator, 2379, 2696, 2377

Tasman Glacier, New Zealand, 2249, 2700, 2703

Tasmania, Australian island State, 2576
charted by Matthew Flinders, 2382

discovered by Tasman in 1642: see page 2379

Englishmen's first meeting with kangaroos, 2146

arms, in colour, 4985
flag, in colour, 6967

Hobart harbour, 2578
map, in colour, 7107

Mount Wellington, 2578

Tasmanian devil, 2391, 2394

Tasmanian wolf, 2391, 2394

Tasso, Torquato, Italian poet, 4583, 4581

Taste, chemical sense, 3903
contact sense, 1552

tongue enables us to taste, 1933
why has water no taste? 6230

why have we different tastes in eating? 6226

taste-bulbs of the tongue, 1933

Tate, Nahum, poet and writer of hymns, 1758: see also Poetry Index

Tatius, king of Sabines, story, 4520

Tatler, The, paper started by Sir Richard Steele, 1731

Tatti, Jacopo: see Sansovino, Jacopo

Taunton, capital of Somerset, arms, in colour, 4991

Taurus, mountain range dividing Asia Minor from Syria, 5679

Taurus, or the Bull, in astronomy, 3975

Tausret, queen of Egypt, silver bracelet of, 6863

Tawny digger, insect, in colour, 5714

Tawny owl, characteristics, 3504
pictures, 2897, 3501

Taxation, system explained, 4657

Tay Bridge, Scotland, 543, 555

Tayeh, China, iron ore deposits at, 6502

- Taylor, Ann** : see Poetry Index
Taylor, Bayard : see Poetry Index
Taylor, Jane : see Poetry Index
Taylor, Jeffreys : see Poetry Index
Taylor, Jeremy : see Poetry Index
Taylor, Samuel, shorthand system, **6844**
Tayra, animal, **792, 790**
Tchaikovsky, Piotr Ilyich, Russian composer, **150**
 portrait, **145**
Tea, story told with pictures, **2283**
 Chinese, **6502**
 colour caused by fermentation, **2285**
 cultivation methods, **2314**
 English tax on tea that caused war with America, **1637**
 production in British Empire and Commonwealth, **2074**
 tannin harmful to digestion, **2023**
 tax explained, **4660**
 do tea or coffee keep us awake? **2173**
 why does tea run through a lump of sugar? **2418**
 why is strong tea bad for us? **1679**
 gardens in Japan, **6626**
 pictures of industry, **2283-87**
 plant, in colour, **2688**
 preparing land for plants, **2314**
Teacup, manufacture, **301-02, 303-06**
Teak, description and uses, **3789**
Teal, wild duck, **3756**
 in colour, **2767**
 cinnamon teal, bird, in colour, **3144**
Team Race, game, **3598**
Teapot, reason for keeping hot a long time, **5567**
 why is there a hole in the lid? **5000**
Tear (physiology), what it is, **6603**
 why are tears salt? **1921**
 glands in eye which make them, **3664**
 See also Crying
Teasel, plant, description, **5021, 205**
 Fuller's : see Fuller's teasel
 flower, in colour, **5143**
Tea that Never Came, story, **4854**
Teeny-Weeny, picture to poem, **2207**
Tees, River, bridges at Middlesbrough, **556**
Teeth, what they are for, and how to care for them, **1929, 1929, 1931**
 what makes our teeth chatter when we are cold? **4996**
 why cannot we grow a third set of teeth? **4760**
 why does a tooth ache? **5252**
Tegner, Esaias, Swedish poet, **4942**
Teguexin : see Teju lizard
Tegula River, South Africa, riders crossing, in Natal National Park, **3182**
Tehran, capital of Persia, **6385, 6396**
 wartime conference at, **6391**
Teju lizard, or teguexin, **4496, 4493**
Tei Aviv, town of Palestine, **6269**
 harbour, **6279**
 street scene, **6279**
Teia polyphemus of U.S.A., moth, caterpillar, in colour, **6210**
Telegraph, what it is, **855**
Telegrams, game, **2118**
Telegraph, its story, **1469, 1801**
 beginnings in British Isles, **1584**
 five-needle, **1841**
 Hughes's type-printing telegraphy, **1844**
 pictures sent by, **1476, 1475**
 utility of, **854**
 picture series, **1471-5**
 wires in Japanese street, **1469**
 See also Wireless
Telegraph cable, its story, **1603**
 picture story, **1605-8**
 ship that laid Atlantic cable, **1581**
Telegraph pole, why has it a little roof on the top? **5493**
 what are the little white cups on the telegraph poles? **5252**
 what are the wire hooks on the cross-bars? **4892**
Telegraph printing machine, in newspaper office, **2405**
Telegraph wires, why do they hum? **4130**
 why, from a train, do the telegraph wires seem to go up and down? **6854**
Tel-el-Amarna, Egypt, Akhnaton builds new Egyptian capital, **6801**
 relics of Egyptian kings found, **6867**
 steps leading to well, **6864**
Tel-el-Kebir, battle of, British victory over Arabi Pasha, **1882** : see page **6878**
Telemachus, an Asiatic monk who tried to stop the gladiatorial shows at Rome, **1386, 1393**
Telemachus, in Greek mythology, story in the Odyssey, **5304, 5306**
Telesaurus, fossil, **1507**
Telephone, its story, **1725, 1841, 1965**
 automatic, how it works, **1971**
 exchange's working, **1965**
 Bells' invention, **22**
 cable, **1967**
 coaxial cable, **1966, 1974**
 Edison's improvements, **1846**
 long-distance calls, how made, **1966**
 manual exchange, how it works, with pictures, **1965**
 microphone first used by Clerac, **1844**
 range of conversation, **1728**
 receiver, **1965**
 Reis's invention the first, **1841**
 relay system, **1966**
 selenium used for transmitter, **6842**
 switchboard, **1969**
 testing line, **1968**
 TIM, clock which gives time, **3168**
 trunk call, **1971**
 United States has more than rest of world together, **3681**
 why do we shake a telephone? **1414**
Pictures of Telephones
 automatic telephone diagrams, **1972-3**
 Bell opening first New York-Chicago line, **1843**
 Bell's first telephone instrument, **1841**
 diagram of how it works, **1727**
 Dom Pedro of Brazil astonished, **1847**
 dynamos and cables at a London exchange, **4384**
 hand microphone and dial instrument, **1725**
 how the exchange works, **1965-70**
 man working on lines in a tunnel, **4384**
 one a boy can make, **124**
 plastic telephones being made, **4012-13**
 Reis's invention, **1841**
 See also Wireless
Teleprinter, what it is, **1470, 1472**
 room at the Central Telegraph Office, **1471**
Telescope, biggest at Mount Palomar, California, **3976**
 Galileo the first to use it in astronomy, **1885, 3609**
 Huygens's twelve-foot telescope, **3613**
 principle of, accidentally discovered by children, **1885**
 Lord Rosse's, **4861**
 Mount Palomar dome, California, **3685**
 telescope of mutiny ship Bounty, **4861**
Telesuto spore, what it is, **1578**
Television, the coming of, **108, 1476**
 transmitting experiments at Broadcasting House, **5110**
 ultra-short waves necessary, **2346**
Pictures of Television
 aerial for outdoor events, **2345**
 Alexandra Palace aerial, **2343**
 Alexandra Palace control room, scenes, **2341**
 Baird's first set, **2339**
 Emitron camera in action, **2343**
 inside of set, **2343**
 projector, **2343**
 viewing in the home, **2345**
Telford, Thomas, Scottish engineer, **1584, 2157, 4867**
Tell, William, Swiss legendary national hero, **529**
 Switzerland's many monuments to, **4670**
 pictures, **529, 531**
Tell-el-Obeldi, excavation of temple there, **6871**
Tellen shell, **6580**
Téllez, Gabriel, or Tirso de Molina, Spanish writer of plays, **5059**
Telloh, site of the Babylonian Lagash, **6870**
Temperature, Centigrade scale best form of measurement, **4835**
 comparative table for various animals, **7068**
 conditions affecting, **2618**
 dew-point, **2865**
 human body's temperature, **1432, 6465**
 of the upper air and stratosphere, **5372**
 what it is and how measured, **5444**
 See also Weather
Tempest, The, story of Shakespeare's play, **1108, 6295**
Tempesta, demi-goddess, **3519**
Temple, Sir William, English statesman and essayist, **1730**
Temple, in ancient art, **5375, 5495, 5626**
 oldest in the world, **5376**
 temple at Jerusalem, **1241, 1988, 2555**
 ancient Greek and Roman buildings, **5505-12**
 Egyptian temples, **5374, 5381-8**
 reconstruction of Solomon's Temple, **2355**
 temples of the East, **5081-4**
 See also Apollo, Diana, Greek art, Greek architecture, and so on
Temple, The, London, Gorboduc, the first English tragedy, acted in, **857**
 origin in time of Knights Templars, **720**
 Wren's work in, **6244**
Temple Bar, Jacobites' heads on, **5691**
 Wren builds, **4227**
 Daniel Defoe in the pillory, **1481**
 views, **4862, 6238**
Temple Church, the beautiful round church the Normans built, **5888**
 exterior, **5882**
Temptation, Mount of, view, **3466**
Tenby, Pembrokeshire, **2002**
 mass of millstone grit near, **2006**
 St. Catherine's Fort, **1462**
Tench, fish, member of Carp family, **4979**
 in colour, facing **5197**
Ten Commandments, **1240, 4901**
 foreshadowed in the Egyptian Book of the Dead, **6877**
Tendon, in human body, **1809**
Teneriffe, largest of the Canary Islands, fig tree at Orotava, **1937**
Tengbom, Swedish architect, **6612**
Teniers, David, the younger, Flemish painter, **1422**
 Old Woman Reading, painting, **3778**
 Players at Tric-Trac, **3775**
 The Prodigal Son, **1427**
Tennant, Edward Wyndham : see Poetry Index
Tennessee, American State, cotton-picking, **3693**
 flag, in colour, **6970**
Tennessee Valley, electricity from water power, **3675**
Tennis, how to play lawn tennis, **3103**
Tennis ball, how tennis balls are made, **4259**
 size compared with Nelson Column, **6971**
Tennis Racket, how it is made, **4260**
Tennyson, Alfred, Lord, English poet, **3337**
 description of water crowfoot, **6010**
 his first railway trip, **2752**
 his Idylls of the King, **308**
 on Nature, **207, 1065**
 portrait, **4134**
 Shiplake Rectory, where he wrote, **3337**
 Somersby Rectory, his birthplace, **3337**
 walking with nurse by sea, **3339**
 See also Poetry Index
Tenrec, small mammal, **294, 293**
Tensile strength, what it means, **1183**
Tent, simple tent to make, **3104**
 the way to put up a bell tent, **2731**
Tenterden, Kent, probable birthplace of Caxton, **1516**
 Caxton reading in fields, **1510**
Tenthredo, girdled, insect, in colour, **5714**
Teonge, Henry, diary kept by, **1850**
Terborch, Gerard, Dutch painter, **1428**
 his paintings, Fatherly Advice, **3778**
 Helena Van der Schalk, **3538**
 Lady Reading Letter, **1423**
Terebra, shells, **1180**
Teredo, or ship-worm, mollusc, damage done by boring timber, **6592, 6581**
Terence, Roman writer of comedies, **5427**; portrait, **5425**
Terminus, Roman god of boundaries, **2877, 3520**
Termite, white ant, **5715, 5721**
Tern, species and habits, **3995**

Arctic tern's route of migration, 222-3
characteristic pictures, 2637, 2639, 3997
varieties, in colour, 2897-8, 3022-3

See also Arctic tern

Terpsichore, muse of dancing, 3517

Terra, mythological goddess, 3514

Terracotta, used by ancient Greek sculptors, 4026

Terra Nova, Scott's Antarctic expedition ship, 6558, 6555

Terrapin tortoise, characteristics and distribution, 4498

Terrier, breeds of the group, 670

varieties of breeds, 666-68

Terror, Mount, extinct volcano on an island in Ross Sea, Antarctica, 6550

Tertiary Period, description, 1877

animal life, 10

Teschmacher, Edward, British composer, 1269

Teschen, industrial town of Poland, 5030

Testament, New, and Old: see Bible
Tester, value of: see old English coins, 7070

Tetanus, anti-toxin treatment, 2628

microbes that cause, 577

Tethys, mythological goddess, 3529

Tetmajer, Polish painter, 5029

Teucer, The, Sir Hamo Thornycroft's fine sculpture in the Tate Gallery, 4768, 4900

Teutobocchus, Cimbrian chief, 1756

Teutoburger Wald, battle of, defeat of three Roman legions under Varus by the German hero Arminius, or Hermann, 4310

Teutons, the people of Northern Europe speaking the Teutonic language, 4291

Tewkesbury, town in Gloucestershire, Norman work in Abbey, 5886

view of Abbey church, 5879

Texas, American State, harvesting machines, 3693

flag, in colour, 6970

plant where magnesium is extracted from sea-water, 3692

Textiles, inventions that founded industry, 5939

See also Cotton, Linen, and so on
Thackeray, William Makepeace, English novelist, satirist, and critic, 2850

seated in his study, 2847

See also Poetry Index

Thaddaeus, apostle, 6791, 6778

Thailand: see Siam

Thales, Greek philosopher and astronomer, 672, 6848

first star maps made by him, 3487

men's thoughts directed away from themselves, 913

portrait, 3487

Thalia, muse of comedy, 3517

Thames, English river on which London stands, 211

discharge of lime, 2494

Dutch fleet sails up it, 1212

view above Tower Bridge, 1219

view at Oxford, 2499

Thames Conservancy, flag, in colour, 6966

Thames House, Millbank, London, designed by Sir Frank Baines, 4230

Thames Tunnel, Sir Marc Isambard Brunel builds, 5946

Brunel's inspiration, 5941, 5947

its construction, 6217

Thanatopsis, by W. C. Bryant, first American poem to live, 4202

Thanatos, Greek god of death, 3532

Thane, Anglo-Saxon title, conferred on merchants trading overseas, 3382

Thank God Harbour, Hall winters in Greenland, 6433

Thaulow, Fritz, Norwegian painter and etcher, his painting, The Halt, 3403

Thaw, why does the thaw burst the water-pipes? 2172

Thaxter, Celia: see Poetry Index

Thayer, Abbott, American figure and landscape painter, paintings by him, 3289, 3295

Theatre, ancient Greek and Roman theatres, 5502

first English one built near London in Shakespeare's youth, 857

to make a shadow theatre, 869

Shakespearean, 4476

modern theatres, 6615

Thebes, ancient Egyptian religious centre, 6801

ancient temples and tombs, 5379, 6874

temple built by Queen Hatshepsut at, 6876

wall painting from, 6865

Theine, substance in tea, 2173

Themis, mythological goddess of justice, 3517, 6930

Themistocles, Athenian statesman and admiral, 890, 3123, 889

Theodosius II, Emperor, peace terms dictated by Attila, 2154

Theophrastus, Greek philosopher, 233

Theotocopuli, Domenico: see El Greco

There was a frog, rhyme and picture, 4186-87

There was a jolly miller, rhyme, music, and picture, 4061

There was a little woman, rhyme, music, and picture, 2830

There was an old woman, rhyme, 232

There were three little kittens, rhyme, music and picture, 5799

Therm, definition of: see units of measurement, 7071

Thermionic valve, in wireless, 2091

Thermo-dynamics, Kelvin's studies, 6314

meaning of, 5441

Thermometer, Galileo's first thermometer, 5445

use on barometer, 5200

Thermopylae, battle of, heroic stand of small Greek force against the Persians in 480 B.C., 3123, 5126, 6389

painting by J. L. David, 3121

Theseum, Athens, 5510

Theseus, duke of Athens, character in A Midsummer Night's Dream, 6294

Thespiea, ancient Greek town to which people travelled merely to see statues by Praxiteles, 4272

Thi, Egyptian architect, 5379

Thickback, fish, 5105, 5105

Thick-knee, or Stone curlew, bird, characteristics and food, 3873

Thicknesse, Philip, Gainsborough's patron, 5698

Thieves and the Cock, fable, 4245

Thigh-bone, longest and strongest in body, 1695

Thimble, why has a tailor's thimble no top? 5252

Thimmonier, Barthélemy, sewing-machine inventor, 5946

Things to Make and Do: the subjects dealt with will be found in their proper places in the index

Thirst, why it is so terrible, 2182

Thirteenth Man, story, 534

Thirty Years War, The (1618 to 1648): see page 4546

Thistle, species and uses, 4414, 4542, 5002, 5266

seed dispersed by wind, 948

several species, 4412, 4541, 5761

various species, in colour, 4288, 4420, 4664, 5143-4, 5393-6, 6127

Thomas, Dr. Calvin, on Goethe, 4698

Thomas, Dylan, British poet, 4084

Thomas, Edith M.: see Poetry Index

Thomas, Havard, English sculptor, 4768

Thomas, Philip Edward, English poet, 4082

Thomas, St., apostle, 6791, 6787

Thomas, Sidney Gilchrist, his steel discoveries, 4103

portrait, 4102

Thomas a Kempis, German Augustinian monk, 1389, 1385

Thomas de Cantelupe, St., shrine, in Hereford Cathedral, 5873

Thompson, Francis, English poet, 4079

See also Poetry Index

Thomson, James, Scottish poet and writer of plays, 1262, 2102

portraits, 1261, 2103

See also Poetry Index

Thomson, James: see Poetry Index

Thomson, Sir Joseph John, English scientist, 4349, 6313

Ruhmkorff coil experiment, 973

tube used to discover electron, 2713

Thomson, Robert William, air-filled tyre patent taken out, 1166

Thomson, William: see Kelvin, William Thomson, Lord

Thor, god of thunder, 594

Thursday gets its name from, 2775, 5223

tries to drain horn, 5223

Thordsson, Sturla, Norse saga collector and historian, 4938

Thoreau, Henry David, American writer on natural history subjects, 4332

Thorgilsson, Ari, Norse saga collector and historian of 11th century, 4938

Thorium, in gas mantle, 3336

Thorn, Polish town where Copernicus was born, 3488

Thorn apple, bursting seed cases, 949

wild fruit, in colour, 3671

Thornback crab, 5477

Thornhill, Sir James, English painter, 3860, 5691

Thornycroft, Thomas, his statue of Boadicea, 891

Thornycroft, Sir Walter Hamo, English sculptor, 4768

his sculptures: Teucer, 4900

The Mower, 4772

Thorpe, John, English architect, 6240

Thorwaldsen, Bertel, Danish sculptor, Chariy, and Cupid and Venus, 5257

Greek sculpture restored by him, 4030

Jesus Christ, 4655

Thoth, Egyptian deity, 316

Thothmes III, Ancient Egyptian king, 6380, 4899

mummy found at Der-el-Bahari, 6866

Thought, brain needs more blood when thinking, 1199

can we measure the speed of thought? 6227

can we think about things that do not interest us? 929

can we think without words? 560

do animals think? 1049

freedom of thought essential, 4210

where does a thought come from? 813

as expressed by three artists, 4033

sculpture by Rodin, 4650

Thoughts, Pascal's beautiful book, 4455

Thousand and One Nights, The, wonderful collection of stories, 5676

tomb of the Lady Zobeide still exists at Baghdad, 5624

Thrale, Mrs., friend of Dr. Johnson, 1978

Thrasher, mocking bird, 3025

Thread-like chorda, seaweed, 3416

Thread-like dumontia, seaweed, 3413

Three-bearded rockling, fish, in colour, 5098

Three Bears, story, with picture, 661

Three-branched polypody, in colour, 1798

Three children sliding on the ice, nursery rhyme, picture, and music, 4805

Three Cups of Cold Water, story, 6931

Three Dimensions, what it means, 3406

Three Fishers, fable, 6933

Three Japanese Mirrors, story, 6319

picture, 6319

Three Jovial Welshmen, rhyme and picture, 5548

Three Kings, picture to poem, 3933

Three Little Pigs, story, with picture, 28

Three Musketeers, story written by Alexandre Dumas, 4457

Three Poor Men, story, 1652

Three-spotted wrasse, fish, in colour, 5097

Three-toed salamander, amphibian, 4745

Three-toed sloth, or Ai, 2271

Three Wise Men of Gotham, rhyme and picture, 5049

Threlkeld, Sir Lancelot, concealed Sir Henry Clifford from vengeance of House of York, 465

Thresher, fox-shark's nickname, 5228

Threshing machine, cutting and threshing wheat, 1571

Thrift, or Sea-pink, 5518

flower, in colour, 5641

Thrinacia: see Hawk-bit

Thrips, insect pest, 5722, 5721

leathery thrips, in colour, 5713

Throat, why does a lump rise in my throat when I cry? 2665

Throne of Venus, fine Greek sculpture now in Rome, 4144

sculptured figures from, 4146-47

Throttle control, in aeroplane pilot's cockpit, 4692

- Through the Looking Glass, story, episode Tweedledum and Tweedledee, 6323
- Throwing-wheel, work of potter on, described, 301
- Thrush, members of the family, 3026 song thrush, feeding habits, 6855
- Pictures of Thrushes**
- American robin, 3017
- cleaning its beak on tree, 2784
- family, 3019
- route of migration, 223
- species, in colour, 2766-7, 3264
- Thucydides, Athenian historian, 5182
- portrait, 5179
- Thumb, of frog, 454
- opposed to fingers to give man his grip, 1694
- Thun, Lake of, Switzerland, 4666
- Thunder, caused by rain, 2868
- peal caused by echo of first clap, 6062
- which side of the cloud is the thunder, on? 1183
- why does a cloud make a noise? 310
- Thunderbolt, what is it? 680
- heraldic charge, in colour, 4986
- Thunderstorm, what happens in, 238
- what to do in a thunderstorm, 2236
- Thuringia, republic of Germany, map, in colour, 7087
- Thurloe, John, English politician, portrait on gold medal, 71
- Thursday, origin of name, 583, 5293
- Thwackum, Parson, who he was, 6856
- Thyella tyrhæa of S. Africa, moth caterpillar, in colour, 6210
- Thyme, of Labiate family, 5022, 5019 varieties, in colour, 5143, 5641
- Thyme thread moss, plant, 3408
- Thymus gland, bones' growth controlled by it, 3174
- Thyroid gland, its position and use, 3174
- rapid development produced by giving extracts from, 4746
- Thyroxin, drug, 2628, 3714
- Tianshan, mountain range in China, 6500, 6510
- Tiber, Italian river, 1405, 4910
- view at Rome, 4921
- Tiberias, events at, 6280
- view, 3470
- Tiberius, Roman emperor, 1538, 2876
- portraits, 1667, 2878
- Tibet, Buddhist country of Central Asia, 6500, 6501, 6503, 6512
- camels crossing a lake, 1525
- Palace of the Dalai Lama at Lhasa, 6517
- Maps of Tibet**
- general and political, 6520
- in colour, 7096
- natural features, 6518
- Tibetan mastiff, wild dog, 541
- Ticino, Swiss tributary of the Po, 4666
- Tick, insect, 5599
- sheep tick, under microscope, 1914
- Ticket, machine that issues railway tickets, 5369
- Tickling, why do we not laugh when we tickle ourselves? 1048
- Ticknor, Francis Orerry: see Poetry Index
- Tiddler: see Minnow
- Tide, due to the spinning of Earth, 16
- investigations by Poincaré and Darwin, 3478
- Moon makes them, 4637
- power of tides, 2496
- can we make tides work for us? 5617
- where does the water go at low tide? 190
- ripple marks on stone, 2004
- waves beating on coast, 2132
- Tidey, Henry, English painter, his paintings, Night of the Betrayal, 4584
- Remorse of Judas, 4587
- Tientsin, Chinese port, 6502
- Tiepolo, Gianbattista, Venetian painter, 935
- Tierra del Fuego, desolate island at the southern extremity of South America, map, in colour, 7104
- street scene, 7012
- Tiflis, town of Georgia, street scene, 6028
- Tiger, homes and habits, 418, 2809
- northern limit in Asia, 5906
- protected in Sumatra, 1654
- sabre-toothed, 11, 1879
- why it has marks on its face, 4611
- why has a tiger stripes on his coat? 1551
- in heraldry, picture, in colour, 927
- migration to Sakhalin, 223
- pictures, 421, 423-4, 439, 1877
- Tiger and the Traveller, story, 3495
- Tiger-beetle, characteristics, 8328
- Tiger Hill Pagoda, China, 5083
- Tiger cat, 416
- Tiger scallop, shell, 1177
- Tiger that Came in the Night, story, 4358
- Tiger Woman of the Jungle, story, 782
- Tiglath-Pileser I, king of Assyria, 6273
- first clear account of Hittites appears in his annals, 6872
- Tigranes, king of Armenia, coin, 5391
- Tigrene frog, amphibian, 4743
- Tigris, river flowing through Iraq, 6266
- scenes, 2498, 6274
- Tigris Plain, beginnings of civilisations in, 6370
- Tihuanaçu, remarkable Inca remains, 7001, 7020
- Tihwa, city of Sinkiang, 6510
- Tikitere, New Zealand, hot springs, 2702
- Tile, house with 60,000 tiles, 2526, 2532
- how tiles are laid on roof, 2532
- Tile-fish, 1400 million killed by cold, 5234
- Tilly, Count John, Austrian general, 4294
- Tilmanstone, Kent, coal, mine scene, 2845
- Tilton, Theodore: see Poetry Index
- TIM, what is TIM? 3168
- Timber, story with pictures, 5349
- amount imported by Britain, 5264
- Australia's hard woods, 2446
- weights of different trees compared: see pounds in a cubic foot of timber, 7070
- See also descriptions of countries
- Pictures of Timber**
- Canadian spruce trees used in making rayon, 6095
- lumber jam on Montreal river, 2193
- lumbermen in Sweden, 5161
- motor-tractor hauling logs, 5355
- picture-story of industry, 5351-62
- trainload of redwood logs, 5349
- Timber wolf, American, 541
- Timbuctoo, caravan centre on the fringe of the Sahara, in the French Sudan, Mungo Park nearly reached it, 3000
- seen from the air, 6751
- Time, electric clock system, 974
- how the length of a day is calculated, 5122
- how to tell the time, 5439
- importance of time at sea, 3576
- measurement of, 7069
- origin of phrase "taking time by the forelock," 4278
- Saturn the god of Time, 3514
- second as unit of time, 4833
- story of traveller through Time, 88
- has the day always been divided into 24 equal hours? 2296
- what is a day? 5121
- what is a time zone? 814
- what is Greenwich time? 680
- who arranged the days? 2295
- B.C. and A.D., symbolic picture, 116
- how a watch works, 6836
- picture-history of clock, 2297
- Seasons dance to music of Time, 2295
- time-map of the World, 812
- See also Greenwich Time
- Times, The, newspaper, first to be printed by steam power, 1518
- Timocharis, Greek astronomer, 3487
- Timor, East Indian island, 5402, 5532
- map, in colour, 7097
- Timotheus, Greek sculptor who helped to make famous Mausoleum of Halicarnassus, 4277
- Timothy grass, 2186, 3306, 583
- Timpanagos Cave, Utah, 3803
- Timur: see Tamerlane
- Tin, Australia's production, 2570
- conductivity: see Heat conductors, 7073
- China's sources of, 6502
- in British Empire and Commonwealth, 2074
- Malaya, world's biggest producer, 3421
- melting and boiling points, 4998
- Phoenicians visit Cornwall for, 588
- specific gravity, 4954
- weight of a cubic foot, 7074
- why is the bottom of a tin ridged? 5491
- See also strength of metals, 7073
- Tinamou, bird, characteristics, 4254
- pictures, 2639, 4247
- Tinder-box, what it is, and picture, 1675
- Tinfin, use in fountain pen manufacture, 2035
- Tinoceras, prehistoric animal, 11
- Tin pyrites, mineral, 1304
- Tintagel, Cornwall, 338
- view of Tintagel Head, 350
- Tintern Abbey, remains of a beautiful Cistercian abbey, near Chepstow, Monmouthshire: poem by Wordsworth, 2473
- view, 837
- Tintoretto, Jacopo Robusti, one of the greatest Venetian painters, 282, 934, 6879
- mural paintings in Palace of the Doges, Venice, 6114
- Marriage of St. Catherine, 943
- portraits by him, 273, 278, 9
- portraits of artist, 271, 6673
- Tiny Thumbeline, story, 5463
- Tippoo, Sultan of Mysore, defeated by Sir Arthur Wellesley, 1453
- Tirana, capital of Albania, 5776
- Tiredness, what happens when we get tired? 5383
- Tirhakah, king of Ethiopia, discovery of shrine at Kawa, 6868
- Tirnovo, Bulgarian city, 5785
- Tirol, Alpine region divided between Italy and Austria, 894, 4545, 4548
- earth pillars in Tirol, 5859, 5856
- Brenner Pass, and scene, 4558
- farmhouse in Austrian Tirol, 4560
- Tirolean Flax Grower, story, 4483
- Tiryns, ancient Greek town, once cradle of Greek art, 4023, 6330
- art discoveries on site, 222
- excavated by Schliemann, 4023, 6987
- Tisiphone, mythological Fury, 3532
- Tissandier Brothers, aircraft designers, 4446
- Tit, or titmouse, bird species, 3020
- habits of blue and great tits, 6855
- long-tailed, nest, 3019
- various species, in colour, 2765, 2899, 2900, 3023-4, 3142, 3263
- Titan, moon of Saturn, 3354
- mythological giants, 3531
- Titan fish, 1136
- Titania, fairy queen in Shakespeare's *A Midsummer Night's Dream*, 984, 6294
- Titania, moon of Uranus, 3356
- Titeonb, W. H. Y., English artist, Red Maids of Bristol, painting by, 3096
- Tite, Sir William, English architect, built Royal Exchange in London, 4230
- Tithonus, story of, 6938
- Titian, or Tiziano Vecelli, Venetian painter, 280, 282, 934, 6678
- pictures of artist, 281, 6673
- his paintings: Ariosto, 933
- Charles V, 3657
- Empress Isabella, 938
- Flora and Holy Family with St. Catherine, 939
- Titicaca, Lake, South America, 7005
- Titmouse: see Tit
- Tito, Marshal Josip, Yugoslav leader, 4556
- Tit tat toe, game, 4468
- Titus, the Roman emperor who built the Colosseum, 2877
- his famous arch, 2877, 5503, 1779
- portrait, 2878; on coin, 5391
- Titus, early Christian Greek, 6588
- Titusville, Pennsylvania, where first oil-well was sunk, 3083
- Tityus, his punishment, 6930
- Tityus beetle, in colour, 6336A
- Tivoli, Italian summer resort, in the Sabine hills, near Rome, 5504
- Roman temple, 5507
- waterfalls, 4925
- Tiw, god of battles, Tuesday gets its name from, 2775, 5222
- capturing the wolf-spirit, 5222
- Tiyi, queen of Egypt, her chair, 6862

Toad, species and habits, 4742
eggs hatched in water, 2516
several species, 4741, 4743
species, in colour, facing 4469
Toad-flax, flower, 4540
species, in colour, 4286, 5394
Toad of Toad Hall, play by A. A. Milne, 404
Toadstool, finding toadstools, 3595
their growth, 1440
Tobacco, description of plant, 2942
number of seeds produced, 1065, 6223
Nyasaland's production, 3314
Raleigh introduces it to Europe, 5207
Southern Rhodesia's production, 3312
plantation in Kentucky, 3693
plantations in England and Cuba, 2936
Tobago, British West Indian island, 3556
flag, in colour, 6967
Tobermory Bay, Spanish galleon in, 601
Toboggan, how to make, and picture, 1245
Todd, Ruthren, British poet, 4084
Todic, West Indian birds, 3260
Toes, in animals, 1756
great toes and webbed toes, 1694-5
toes of frog, 454
could we walk without them? 60
Toffee, how to make, with picture, 1742
Toft, Albert, British sculptor, sculptures by him, 4770, 4900
Toft, Danish word for enclosure, from which Lowestoft is derived, 596
Toggle joint, in machinery, 6351
Togliatti, Palmiro, Italian Communist leader, 4916
Togo, Heiachiro, Japanese admiral in the Russo-Japanese War, 6620
Togoland, British West Africa, 3318
Togoland, French West Africa, 4049, 6749
Tokyo, capital of Japan, 6622
public buildings and scenes, 6618, 6623, 6626, 6628, 6629
Toledo, ancient Spanish city, 5278
alcazar of Toledo, 6372
architecture of cathedral, 5994
El Greco works there in the 16th century, 1307
first place in Europe to make paper, 1294
general view, 5284
Tolstoy, Count Alexis, Russian lyrical poet and writer of plays, 4817
Tolstoy, Count Leo, the most famous Russian novelist and social reformer, 4818
painting by Jan Styka, 3398
portrait, with father, 4134
Toltecs, ancient people of Central America, 6996
Tomato, cultivation, 2432
as it grows, 2439
seed chambers, 333
Tomb, ancient Egyptian and Greek tombs, 316, 321, 426
famous tombs in India, 5623
Saracens discontinue building large tombs, 5624
Tomb of Mausolus, 4884
Tom Bowling, song by Dibdin, 1262
Tom Jones, novel by Fielding, 2348
Tomlinson, Henry Major, English novelist, 3714
Tommy Atkins, who is he? 5493
Tomopteris, marine worm, 6297
Tompot, fish, in colour, 5099
Tom Thumb, story and picture, 783
Tom Tiddler's ground, what is it? 5128
Ton, Anglo-Saxon word for town, 587
Tonbridge, Kent, Bayham Abbey, 964
Tudor houses, 1085
Tonbridge School, arms, in colour, 4989
Tonga Islands, Pacific Ocean, 3427
chief's house, 3419
flags, in colour, 6967
natives watch coming of British, 2078
Royal Palace, Nukualofa, 3433
Tongres, Belgium, Roman road, 5645
Tongue, its work, 1932
touch-bodies in it, 1433
where taste cells are richest, 3904
why does mustard burn our tongues? 6101
why is that of a moth so long? 2044

taste bulbs, diagram, 1933
Tongue-twisters, 632
Tonkin, Dr., Humphry Davy's early friend, 5323
Tonking, Indo-China, 6512, 6513
Tonks, Henry, English painter, 2677
Tonnage, of a ship, 4015
Tool, earliest known tools, 194
See also names of tools
Tool-kit, boy carpenter's tools, and how to use them, with pictures, 121
Toothache, causes of, 1930
Tooth-billed pigeon, bird, 4123
Tooth-brush, how to use, 1931
Toothed corn-salad, what it is like, 4543
flower, in colour, 4662
Tooth-shell, 6581
Toothwort, flower, 4778
Top, how to make a magnetic top, 873
how to make a spinning top from a cotton reel, 2116
Topaz, precious mineral, 1301
Tone, name given to mounds raised by Buddhists in India, 5623
Tope, fish, 5231
Topham, C. F., pioneer of artificial silk, 4105
Tonham, Francis William, his paintings, Burning of Vanities in Florence, 1388
Eli blessing Samuel, 1739
Naaman's little Maid, 2726
Top-knot, fish, life-story, 5105
Toplady, Augustus, English writer of hymns, 1760, 1759
Top shell, 6581
Topsy-turvy railway, what keeps a train on a topsy-turvy railway when upside down? 4517
Tor Bay, brave diver of, story, 6935
Torch, allegorical picture, 80
how electric torch works, 480
Torch extinguisher, in Adelphi, London, 4859
Torch-thistle, what it is like, 3053
Torels, London family of goldsmiths who made some famous effigies, 4763
Tormentil, flower, in colour, 5141
Toron, town of Poland, town hall, 5036
Toronto, capital of Ontario, Canada, 6475
scene, 2328
Torpedo-ray, fish, 5101, 5105
Torquay, watering-place in South Devon, prehistoric remains found, 1880
general view, 1712
Torrens, Lake, shallow South Australian lake, 6063
Torres, Louis Vaez de, Spanish navigator, 2378
Torres Vedras, Portuguese town, Wellington's famous lines, 5410
Torricelli, Evangelista, Italian scientist, 5198
Torrigiano, Italian sculptor, 4766
Tortoise, reptile family, 4497
keeping tortoises as pets, 1363
species, 4489, 4497
Tortoiseshell, obtained from hawkbill turtle, 4498
Tory, old name for the Conservatives, 2137
Tosi, wireless compass inventor, 3364
discovered directional wireless, 2096
Totem, why the savage makes a totem, 3097
what is a totem pole? 6354
Toucan, bird characteristics, 3258
picture, 3254; in colour, 3143
Touch, mother of all senses, 1433, 2935
Touch, game, 3724
Touch-me-not, flower, member of Crane's-bill family, described, 4782
Touchstone, jester in Shakespeare's *As You Like It*, with Audrey in Forest of Arden, 6045
Touet de Beuil, France, scene, 4056
Toulon, fortified French seaport on the Mediterranean, 1453, 4645
siege of Toulon, 1441, 1453, 4044
Toulouse, French cathedral city, 4178
architecture of cathedral, 5990
church of St. Sernin, 5990, 5751
Toulouse-Lautrec, Henri de, French painter, 3042
portrait by him, 3041
Tourmaline, mineral, 233

picture, 1301
Tournai, city of Belgium, 5650
architecture of cathedral, 5991
Rue St. Martin and cathedral, 5654
Tournament, medieval joust, 3506
Tours, battle of, Christianity upheld and Mohammedanism defeated, 2473, 2521, 3917
Toussaint l'Ouverture, Haitian Negro patriot, 893
portrait, 3239
watching the coming of Napoleon's fleet, 892
Tout, Professor Thomas Frederick, on Middle Ages, 3633, 3640
Towednack, Cornwall, archaeological discoveries at, 6937
Tower, development in church architecture, 5744
weight and height of towers, 5871, 5989
Tower, Control, at Croydon Airport, 429
Tower Bridge, London, planned by Sir Horace Jones and Sir J. Wolfe Barry, 4230
views, 1219
Tower of Babel, in Bible, 497
probably one of the 250 towns of ancient Babylon, 5377
Tower of London, history of its building, 4228
chapel built by William I, 708
interesting interior architecture, 6236
little Princes said to have been murdered there, 960
White Tower built in Norman style, 5866, 6235

Pictures of Tower of London

block and axe, 4859
general views, 1217, 4236, 6247
Norman Chapel, 719
relics of fire (in 1847), 4863
Traitor's Gate, 4860
Town, man first builds towns, 170
origin of word, 587
Town and Country Mouse, fable, 3991
Town Clerk, his duties, 4410
Town Council, its work, 4407
Towneley Venus, sculpture of first or second century B.C., 5133
Town Planning, what it has done in Britain, 6603
Townshend, General, in Mesopotamia, 1703
Town Surveyor, who he is, and his duties, 4411
Towy, river of South Wales, view of Carmarthen, 1461
Toxeus, brother of Althaea, 6818
Toy, one for measuring the wind, 749
Toy Pomeranian, dog, 655
Tractate on Education, by Milton, 1232
Tractor, why farm tractor has deeply-grooved tyres, 5493
at work on Canadian prairie, 2317
caterpillar, used in clearing ground, 3033
Trade, English trade before the time of shops, 3381
British Isles and their free market, 5263
growth in Stuart age, 1214
interdependence of local and world trade, 6185
International Trade Charter signed by sixty nations, 6484
Jews help to develop it, 3152
plants that help our industries, 2937
servant of its customers, 6124
Suez Canal's effect, 4868
trade of 11th century, 3030
war's disastrous effect on trade, 4302, 6126
what is meant by trade between nations, 5261
world exchange of goods explained, 6126
Trade Boards Act, introduction of, 1706
Trader : see Merchant
Trades' Dispute Act, introduction of, 1706
Trade Union, beginning of idea, 1582
T.U.C. and the General Strike, 1827
transportation penalty for forming them in 1834 : see page 1582
made illegal in Germany, 4803
very good trade unions benefit all, 5640
Trade Winds, effect on climate, 2629
effect on rainfall, 2744

what are the trade winds ? 2416
 what the force behind them is, 2416
 why so called, 5321
Tradition, what does it mean ? 314
Trafalgar, battle of, Nelson's great victory, 1455
 Nelson on the Victory, 1450
 ships of Nelson's Fleet, 1450
 signal book used, 4859
 the Victory, 4861
Trafalgar, Cape, Spain, 5410
Trafalgar Square, London, 4228, 1218
 subway entrance, 4374
Traffic, safety rules, 6837
 how traffic-signals work, 6850-52
 model traffic roundabout for children, 6837
Tragacanth, how it is obtained, 2938
 seeds of gum, 2690, 2938
 plant, in colour, 2685
Tragedy, *Gorboduc* the first English tragedy, 857
 what it is, 6161
Tragopan, horned, bird, 4251
Traherne, Thomas : see Poetry Index
Trailing azalea, description, 5518
 flower, in colour, 5641
Trailing rose, what it is like, 4780
 flower, in colour, 4908
Trailing St. John's wort, flower, in colour, 4286
Train, general account of trains, 3943
 picture story, 4069, 4191
 wireless conversation from one, 1728

Wonder Questions

does it take more power to stop a train than to start it ? 1182
 when I walk in a moving train, do I move faster than the train ? 442
 why does a train make a noise in a tunnel ? 6842
 why does a train not run off the lines when rounding curves ? 6729
 why does the whistle change as the train comes nearer ? 2296

Pictures of Trains

development in 19th century, 1583
 early steam coach, 2745
 electric train used in tunnelling, 6220
 how it picks up and delivers mails, 4634
 leaving Windsor station in Canada, 3205
 series of pictures, 4067-4076, 4191-4200
 why it keeps on rails, 6729

See also Railway, Railway engine and Underground Railway

Trained bands, leaving London to fight the King, 4007

flags of London trained bands, 6968
Train-ferry, Harwich-Zeebrugge route, 5648

Traitor's Gate, river gate of the Tower of London, picture, 4860

Traitor who Became Loyal, story, 3370
Trajan, Roman emperor and soldier, 2877

his Column at Rome, 3284, 4404, 5503
 Arch of Trajan, 1779

fragment from monument in Forum, Rome, 1781

Plotina, his wife, 2878

portrait, 2878

Trajan's Column, 1782

Trajan's Forum, reconstruction, 5501

Trakl, Georg, Austrian poet, 4700

Transfiguration picture by Giovanni Bellini, 940

Transformation tables, 7071

Transit Circle, what it is, 5121

Transjordan, (the Hashemite Kingdom of Jordan), 6269

flag, in colour, 6975

general and political map, 6400

map, in colour, 7093

scenes, 6277

Transmission, in mechanics, 6349

Transparent trumpet anemone, flower, in colour, 1555

Transport, before railways came, 2745
 nation's wealth increased by organised, 5886

reorganisation of transport in Europe by Uno, 6483

rovers as carriers, 2494

map of world transport, 94

Transporter Bridge, at Middlesbrough 556

Trans-Siberian Railway, bridge over Yenisei River, 6028

Transvaal, South African province, 3183, 5718

arms, in colour, 4985

Hartebeestpoort Dam, 5972

lions in the National Park, 3182

views of Johannesburg, 3189

views of Pretoria, 3189

See also Rand

Transylvania, province of Rumania, 4550, 5772

Trapani, seaport in Sicily, 4915

Trap ball, game, 3596

Trap-door spider, nest, 5598, 5593

Trapezium, how to find area, 7075

Trapezoid, how to find area, 7075

Travellers and the Heron, story, 4611

picture, 4245

Traveller's dinner, problem and picture, 4467, 4591

Traveller's joy, plant, 948

flower, in colour, 4288

Traveller's tree, description, 3052

picture, 3053

Treacle Bible, what it is, 5734

Treasure and Where it Lay, story, 6080

Treasure Island, R. L. Stevenson's book of adventure, 3711

Treasure of Rhamsinitus, story, 3622

Treasury, First Lord of, became leader of Cabinet in time of George I, 1323

Trebonianus Gallus, Roman emperor, portrait, 2879

Tree, flowering trees, 4037, 4151

life-story of one, 3541

timber-yielding trees, 3785, 3905

beauty trees, 4037

coconut palm, its many uses, 2070

curious way of measuring a tree, 2235

how to make paper Christmas trees, 6669

how to measure the height of a tree, and picture, 1246

in Carboniferous Age, 10

in Cretaceous Age, 1636

moss trees in Devonian Age, 1136

rings of growth, 3544

signifies garden of Paradise in early Christian art, 446

their strength, 84

uses of, 3542, 5350

Wonder Questions

how can we tell its age ? 4996
 what is the oldest in the world ? 6467
 what makes the roots of a tree grow downward ? 2416
 why does a tree grow straight ? 4394
 why does a tree grow upward ? 64
 why does a tree stop growing ? 3652
 why does bark grow on a tree ? 5252
 why do its branches grow sideways ? 1679
 why do some trees flower ? 4022
 why do the leaves of the aspen tree always shake ? 3396
 why do trees not die in winter ? 4763

Pictures of Trees

fine avenue, 3785
 in summer and in winter, 1917
 motor-car in trunk, 456
 power while growing, diagrams, 2417
 root structure, diagram, 459
 timber, picture-story, 5351-62
 timber-yielding trees, 3905-16
 types of roots, 456, 2372
 varieties, series, 4151-61

See also Forest ; Timber ; and specific names of trees

Tree Creeper, bird, 3018

in colour, 3021

Tree-frog, characteristics, 4744

Tree kangaroo, picture, 2396

Tree mallow, what it is like, 5764

flower, in colour, 5643

Tree of heaven, winged seeds, 947

Tree pipit, bird, in colour, 3021

Tree-shrew, or Tupaia, 298

Trees in the orchard, puzzle and picture, 6300, 6423

Tree sparrow, in colour, 2768

Tree-wasp, in colour, 5714

neats, 5834

Trefoil, grown for food, 2138

bird's foot, flower, in colour, 4420

sulphur-coloured, flower, in colour, 4418

Trefoil, heraldic charge, 928

Trelawny, Edward John, friend of Shelley, 2599

Trench, machine used in digging, 3034

Trench, Richard C. : see Poetry Index

Trengganu, Federation of Malaya, 3423

flag, in colour, 6967

Trent, Jesse Boot, Lord, founder of Boots the chemists, 4110, 4102

Trent, Council of (1545 to 1563), condemned the Reformation, 4794

Trent Affair, American Civil War incident, 6550

Trent and Mersey Canal, inland waterway, 4867

barge floating into lift, 4880

Trenton, battle of, Washington on horseback, 1642

Treny, Kochanowski's poems, 5027

Trer Ceiri, ancient camp in North Wales, 6993

Tresspass, law as to people and animals, 4904

children looking at trespass board, 4901

Trevelyan, George Macaulay, British historian, 3828, 4500

portrait, 3827

Treves, or Trier, German city, Liebfrauenkirche, 5991

Roman remains, 4428

Trevithick, Richard, English inventor, builder of steam locomotive, 2752, 2836, 3212

at work on his engine, 2755

on his locomotive, 2749

railway set up in Euston Square, 2747

Triaenodes, insect, in colour, 5713

Triangle, how to find area, 7075

Triassic Age, what the world was like then, 1381

animal life, 10, 1381, 1383

fossil remains, 1383

Tribune of the People, name given to Mirabeau, 650

Triceratops, prehistoric monster, 1636

Trichia fungus, spores exposed to wind, 947

Tricks, balance tricks with pencils, 1238

blowing a brick over on a table, 1867

card that will not fly away, 1493

card which somersaults, 2484

chair that comes to you, 1944

clever paper catch, 2117

coin in the handkerchief, 5438

coin suspended, 5194

coin that cannot be moved, 1493

coin tricks, with pictures, 2609

conjuring trick with nuts, 4951

cut string that does not fall, 3847

cutting a pear in two, 6302

cutting the magic string, 3847

dumb-show tactics, 2484

feeding the pips, 993

floating ball and a lively apple, 3232

for odd half-hours, 2117

good match, 2235

guessing a chosen card, 999

gymnastic exercise, with picture, 253

how to make a bottle blow out a candle, 1123

how to make a magic knot, 5684

lifting a bottle with a straw, 2117

magic touch, 1000

magic tumbler, 3630

making a candle that can be eaten, 631

mysterious bottle of water, 754

mysterious cricket bat, 3474

mysterious moving plate, 1123

mysterious paper purse, 1253

mystery of the suspended knife, 1991

pulling a match through another, 3597

reading the pack, 999

ring and coin trick, 3800

robbers and the soldiers, 5063

simple gymnastic trick, 2112

simple tricks with a penny, 875

some hints and tricks to try, 1493

spotting a touched card, 2484

stool trick, 5316

to try on friends, 6871

trick sick, 1493

tricks to do with matches, 1624

tricks with a box of matches, 1496

tricks with figures, 2114

trick you can play with a book, 2982
two catch tricks with a handkerchief, 1624
two lifting tricks, with picture, 1249
trying two people together, with picture, 1368
wand that will not fall, 4217
with matches and matchboxes, 5933
wizard's wand, 631
Tricks of Scapin, story and picture, 5215
Trieste, important Adriatic port, becomes Free Territory after Second World War, 4909, 4787
Trifid bur-marigold, what it is like, 5890
Trifolium, name of crimson clover, 2188
Triglyph, architectural term, 5497
Trigonometry, meaning of, 4383, 4388, 4389
Trillion, what it is, 5493
Trilobites, fossil marine animals, 10, 646 description, 888
extinct members of Crab family, 5472 in Silurian Age, 1009
pictures, 1135
Trinidad, British West Indian island, 3556 what is the great pitch lake of Trinidad? 6730
cacao fruit being opened, 2311
cactus of Trinidad, 3054
digging asphalt, 3560
flag, in colour, 6367
map, general, 7030
map, in colour, 7103
native street in San Fernando, 3562
Port of Spain cathedral, 3561
Treasury building, Port of Spain, 3560
Trinitrotoluene, composition, 4346
Trinity College, Cambridge, arms, in colour, 4988
Trinity College, Dublin, arms, in colour, 4983
Trinity College, Oxford, arms, in colour, 4988
Trinity Hall, Cambridge, arms, in colour, 4988
Trinity House, ancient corporation controlling pilotage, lighthouses, beacons, and so on, round the British Isles, Brotherhood of Mariners, duties performed, 3166
flags, in colour, 6966
Trional, coal-tar product, 4472
Triopteris, plant, two-winged seeds, 947
Triple Alliance, Germany, Austria, and Italy, 2479
Triplex glass, how made, 3886
Tripoli, Lebanon port, 6270
silos for storing wheat, 6271
Tripoli, town of Libya, 6754
Allies in Second World War unite at, 1945
annexed by Italy, 4049
Tripolis, town of Greece, 5768
Tripolitania, part of Libya, 6754
native family, 6748
Triptolemus, story, 6819
Tristan da Cunha, British island in the South Atlantic, 3558, 5400, 3562
Tristram, Professor, ancient frescoes restored by, 1923
Tristram, Sir, story of, 6942
made Knight of Round Table, 6946
Triton, classical demigod, 3629
Triton, moon of Neptune, 3366
Triton cockatoo, bird, 3499
Tri-valent, chemical term, 4347
Trnovo, or Tinnovo, city of Bulgaria, 5775
Trochus, shell, 1179
Trochus magus, shell, 1177
Trogon, bird, characteristics, 3258
Cuban trogon, 3254
Duvauce's, in colour, 3261
Trogus ichneumon-fly, in colour, 5714
Trollius : see Globe-flower
Trollope, Anthony, English novelist, 5584, 3579
Tromp, Van : see Van Tromp
Tromso, fishing and sealing port in Norway, 5151
Trondheim, ancient Norwegian cathedral city, 5151, 5157
cathedral, 5158
Trondheim Fjord, Norwegian inlet, 5150
Tropical belts, area and character, 2127
Tropic-birds, characteristics, 3751

guarding their egg, 3749
Tropopause, what it is, 5372
Troposphere, what it is, 5372
Troupial, American bird, 2895
Trout, characteristics, 4980
picture-story of life, 4977
varieties in colour, facing 5197
Trowbridge, John, American scientist, 3359
Troy, ancient city in Asia Minor, 322, 5303
site discovered by Schliemann, 6986
story in the Iliad, 5303
who was Helen of Troy? 4518
Helen walking on walls, 5305
lead figure from, 6985
ruins of second city, 6990
wooden horse before gates, 5555
Troyes, city of France, taken by Joan of Arc, 2262
Tryon, Constant, French landscape and animal painter, 2790
Oxen going to Plough, painting, 2796
Try weight, 7069
True maiden hair, fern, in colour, 1799
Truffle, edible fungus, 3411
Truman, Harry Shippe, American President, 3800
Trumbull, John, American painter, 3286
Trumpet, which sounded the charge at Balacava, 4862
Trumpeter, bird, 3873 : picture, 3869
Trumpet anemone, flower, different kinds, in colour, 1553, 1555
Tuaro, Cornish cathedral city, features of cathedral, 6472, 6605, 6731, 6476
arms, in colour, 4991
Truss : see hay and straw weight, 7069
Trusteeship Council, of Uno, its work, 6479
Truth, civilisation's basis, 493, 1733
Greek mind always in search of truth, 674, 916
Spanish Inquisition test, 493
Truth at bottom of Well, picture, by A. Dixon, 495
Trying to get to the door, game, 6302
Trying to Please Everybody, story, 157
Tryon, Dwight William, American landscape painter, 3287
Spring Morning, painting, 3291
Trypanosomes, a species of parasitic protozoa, 6956
and sleeping sickness, 6958
Tsavo River, East Africa, rhinoceros attacks on troops, 1773
Tsetse-fly, carrier of tsetse-fly disease and sleeping sickness, 2628, 6088
zebra unaffected, 1899
insect, 1916, 6461
parasite of, under microscope, 1911
Tsingtau, Chinese port, 6502
Tuatara, reptile, 4494, 4492
Tubal Cain, invented metal working and stringed instruments, 376
picture to poem, 1953
worker in brass, 374
Tube Railway : see Underground Railway
Tuberculosis, germ discovered by Koch, 699, 2624
how infection is spread, 2666
microbe develops rapidly in milk, 697, 2310
number of deaths in a year, 699
Uno and, 6487
microbes that cause it, 577
Tuberous bitter vetch, 4782
flower, in colour, 4908
Tubers, underground stems, 2436
pictures, 6494
Tubsh, in colour, 5097
Tudman, Harriet, Negress who worked to rescue slaves, 4455, 4485
Tucks, needlework, how to sew, with picture, 2860
Tucuman, city of Argentina, 7017
Tuoro Age, awakening of a new thirst for knowledge and discovery, 1073
merchant-adventurers, 5384
religious quarrels, 1076
examples of architecture, 844, 1085-88
Tuoro rose, origin, 960
Tuesday, origin of name, 2775, 5221
picture, 5222
Tufted air grass, growth affected by water, 2186 : picture, 583

Tufted centaury, what it is like, 5268
flower, in colour, 5393
dwarf, flower, in colour, 5644
Tufted duck, bird, in colour, 2897
Tufted hair grass, 3308
Tufted vetch, what it is like, 4416
flower, 4413
Tufted water scorpion grass, 6012
Tul, bird, powers of mimicry, 3020
Tulleries, palace in Paris, 652, 4044
Tuke, Dr. Daniel, William Tuke's grandson and follower, 5453
Tuke, William, English philanthropist, 5455, 5459
Tule, Mexico, oldest tree in world in churchyard there, 6467
Tulip, member of genus Tulipa, 6497
heat causes flowers to open, 536
pictures of different varieties, 6378, 6379, 6382
Tullin, Christian, Danish poet, 4939
Tumbler, how to lift one tumbler with, another, with picture, 874
the magic tumbler, trick, 3600
whirlpool in a tumbler, 2117
how did the frogs jump on the tumblers? with picture, 1495
music from drinking glasses, with picture, 1495
Tunbridge filmy fern, in colour, 1797
Tunbridge Wells, Kent, view, 1590
Tundra, vast barren lowlands fringing the Arctic coasts of Europe, Asia, and North America, 1070, 2125
Tungsten, metal, uses, 1093
China's production largest in the world, 6502
melting point, 7073
Tunicate, marine animal, backbone experiment by Nature, 42
Sea-squirt's other name, 5345
Tuning coil, wireless, 2216
Tuning-fork, why does it sound louder when it touches wood? 5370
Tunis, capital of Tunisia, 6744
surrender of German Africa forces during Second World War, 1945
views, 6760
Tunisia, French protectorate in North Africa, 6744
flags, in colour, 6975
inhabitants, 89, 6745-47
Roman colosseum at El Djem, 5509
map, in colour, 7098
Tunnel, Alpine tunnels, 6595
amount of material taken out, 6596
Greathead Shield used in making, 6216
London's tunnels, 4375
longest railway tunnel, 6595
Mersey tunnel, its construction, 6214
ventilation of, 4378
what are the biggest tunnels? 6595
why does a train make a noise in a tunnel? 6842
Pictures of Tunnels
building the Thames Tunnel, 6217
conveyor tunnel on G.P.O. underground railway, 4383
Mersey tunnel, 4377
picture-story of construction, 6215-28
Tupaia : see Tree-shrew
Tur, goats closely allied to sheep, 1285
Turaco, bird, scientific name for the plain-ate-cater, species, 3350
Turbo-jet engine, Sir Frank Whittle's invention, 5950
Turbine : see Steam turbine and Water turbine
Turbinella, shell, 1178
Turbot, fish, 4558, 5105
in colour, 5099
life-story in pictures, 5103
Turgenev, Ivan, one of the greatest Russian novelists, 4818, 4815
Turin, industrial city of northern Italy, 4912
cathedral of John the Baptist, 4920
Turke-tan : see Chinese Turkestan
Turkestan-Siberian Railway, 6509
Turkey, republic of south-east Europe, history and description, 6131
Balkan Peninsula freed from, 4622
Byzantine architecture, 5624, 5740
Greek independence recognised, 4622
Hungary desolated by, 4547
in First World War, 1709

crigin of Turks, 6510
 Russian attacks on, 5890
 Sicily invaded by, 4784
 territories lost through First World War, 1710

Pictures of Turkey

flags, in colour, 6975
 scenes and buildings, 6131, 6133, 6139-44

16th-century jug, 71
 some people of today, 6145
 map, physical, 6146
 map, in colour, 7093

Turkey, bird, habits of Australian, 4254
 Mexican bird brought from West Indies by Columbus, 4254

pictures, 4249, 4251
 Turkey-buzzard, characteristics and food, 3632

Turkey oak, what it is like, 3785

fruit, in colour, 3671
 Turkey red, Tutankhamen's clothes dyed with it, 4472

Turkey rhubarb, origin of name, 2684

plant, in colour, 2687

Turkey-vulture : see Turkey-buzzard

Turkmenistan, a republic of U.S.S.R., 6014

map, 5904

Turk's cap cactus, what it is like, 3058

picture, 3055

Turk's cap lily, flower, picture, 6381

Turks and Caicos Islands, British West Indian island group, dependency of Jamaica, 3554

flag, in colour, 6967

Turku, or Abo, old capital of Finland, 5154

Turneric, description, 2808

Turnerol oil, obtained from curcuma plant, 2808

Turnapull, mechanical excavator used in preparing aircraft landing-grounds, 3031

Turnberry, Scotland, reputed birth-place of Robert Bruce, 341

Turnbuckle, in machinery, various kinds, 6352

Turner, Charles, English mezzotint engraver, portrait of J. M. W. Turner by, 5701

Turner, Charles Tennyson : see Poetry Index

Turner, Elizabeth : see Poetry Index

Turner, Joseph Mallord William, English landscape painter in water-colour and oil, 2424, 5702

characteristics of pictures, 67, 2424

his sunsets, anecdote, 1360

Ruskin's eulogies, 3220

work compared with that of Claude Lorrain, 1684

portraits, 5691, 5701

Pictures by Turner

Chichester Canal, 2419

Fighting Téméraire, 2422

Hindu Devotions, 2422

Turner, W. J., British poet, 4084

Turnip, food for animals, 2188

brought to Britain from Holland, 1154

food value, 1436

member of Cabbage family, 2442

swede turnips in New Zealand, 2705

Turnip fly, and gall weevil, harboured by charlock, 3177

Turnip saw-fly, insect pest, 5844

in colour, 5714

Turn-table, on railway, 4074

Turpentine tree, where it grows, 2937

Turquoise, precious mineral, 1301

Turtle, characteristics, habits, and food of different species, 4498

Turtle-dove, distribution, 4124

significance in early Christian art, 446

pair, in colour, 2765

pair, 4123

route of migration, 223

Turnstone, bird, migration of, 3876

Tutankhamen, ancient Egyptian king, accession to throne, 6801

contents of tomb, 6859

discovery of his tomb, 6867, 6874

pictures of jungle fowl in tomb, 4252

tomb, in relation to Egyptian architecture and art, 3892, 5379

treasures from tomb, 6862-63

wooden effigy, 6863

Tutsan, what it is like, 4782

flower, in colour, 4906

wild fruit, in colour, 3668

Twachtman, John H., American landscape painter, 3287

his painting, Snow, 3290

Twain, Mark, pen-name of Samuel Clemens, American humorous writer, 4333

novel based on finger-print identification, 6728

portrait, 4331

Twayblade, what it is like, 4781

flower, 4778

Tweed, river forming part of border between England and Scotland, 342

Tweedledum and Tweedledee, story from *Through the Looking Glass*, 6323

rhyme and picture, 6905

Tweedsmuir, Lord : see Buchan, John

Twelfth Night, story of Shakespeare's play, 6049

Malvolio and the Countess, painting by D. Maclise, 1106

O Mistress Mine, painting by E. A. Abbey, 3657

Twells, H. : see Poetry Index

Twelve Dancing Princesses, story and picture, 2139

Twelve Tables, The, oldest code of Roman law, 4774

Twenty-five ways of saying the same thing, 2238

Twice Told Tales, Nathaniel Hawthorne's stories, 4332

Twin bladderwrack, seaweed, 3416

Twite, bird, picture, in colour, 2768

nest and eggs, 2903

species, 2892

Two Brothers, The, story, 2266

Two Cocks, The, fable, 3990

Two-coloured triaenodes, insect, in colour, 5713

Two Daughters of Japan, The, 6952

Two Friends, The, story, 3370

Two Frogs, The, fable, with picture, 4115

Two Gentlemen of Verona, the story of Shakespeare's play, 6039

Two-headed rhinoceros, 1775

Two Kings, The, story, 289

Two Little Kittens, rhyme picture, 1964

Two-Minute Silence, how did the great silence begin ? 6724

Two-penny, William English draughtsman, 3858

Two-speed gear, 6350

Two-striped pulleys, 6349, 6350

Two-striped rhagium, in colour, 6335

Two-stroke engine, how it works, diagrams, 4329

Two-toed sloth, or unau, 2271

Tybalt, character in Shakespeare's *Romeo and Juliet*, 6181

Tyburn, place of execution in London, 524, 528

Tycho Brahe, Danish astronomer, 3491

buys globe with savings, 3489

explaining globe to Kepler, 3490

tomb in Prague, 3488

Tyerman, Nelson Rich : see Poetry Index

Tyler, Wat, legend of sword in arms of City of London, 4991

dagger which killed him, 4862

Tympanum : see Ear

Tyndale, William, English Protestant reformer, 485

persecuted for translating the Bible, 120

translating the Bible, 119

Tyndale's Bible, what it was, 6858

Tyndall, John, Irish scientific writer, found out why sky is blue, 6234

vowel flame invented by, 6429

Typhoid, water poisoned by bodies of migrating lemmings, 1035

germs resisted by white blood cells, 1061

microbes that cause, 577

Tyr, battle god, wrist bitten through by Fenris, 1274

Tyrant bird, habits and home, 3146

varieties, 3147

Tyre, Lebanon, ancient capital of Phoenicia, 6270

sieges of ancient Tyre, 6280

Tyre, Dunlop tyre described, 1168

pneumatic tyre invented by John Dunlop, 4112

why farm tractor's tyres are deeply grooved, 5493

how motor-tyre is made, 1409-12

Tyrol : see Tirol

Tzu Hsi, Dowager Empress of China during Boxer Rising, 6504

U

Ubangi-Shari, colony of French Equatorial Africa, 6750

Uccello, Paolo di Dono, Florentine painter, 825

Udad : see Barbary sheep

Udaipur, town of India, Jain temple interior, 5084

temple, 2955

Udall, Nicholas, English writer of plays, 857

Udi, coalfields area of southern Nigeria, 3317

Uffizi Gallery : see Florence

Uganda, British protectorate in equatorial Africa, 3315

Pictures of Uganda

flag, in colour, 6363

map, in colour, 7098-99

maps, industries and physical features, 3196-98

native, 3319

railway engine, 3511

school swimming bath, 3319

Uganda Railway, lions cause reign of terror, 418

Ugly Duckling, story and picture, 3493

U-grooved wheel pulley, 6349

Udde, F. von, his paintings, Last Supper, 4703; Nativity, 3594

Ukraine, a republic of U.S.S.R., 4548, 6016

Maps of Ukraine

general, 5904, 5908

physical features, 5905

Ulan Bator, capital of Outer Mongolia, 6511

Ullea's Ring, seen around the Spectre of the Brocken, 3163

Ulm, German city, architecture of cathedral, 5991

height of cathedral spire, 7056

cathedral exterior, 5997

Ulm, battle of (1805), Napoleon defeats Austrians, 1455

Ulphilas, Bishop, German barbarians converted to Christianity by, 1907

Ulpian, Roman jurist, definition of justice, 4774

Ulster, old province of Ireland, 1206, 3060

Home Rule for Ireland quarrel, 1707

See also Northern Ireland

Ulster Unionists, northern Irish political party, 3093

Ultra Microscope, its powers of magnification, 1835

Ulysses, Latin form of the Greek name Odysseus, 5304

story in the *Iliad*, 5303

story in the *Odyssey*, 5304

Tennyson's poem, 3340; picture, 3325

Umbel, in botany, 6495

Umbel, Salmon family, 4982

Umberto, last king of Italy, 4783

Umbrella, how to dry one, 1625

Umbrella bird, characteristics, 3148

Umbrian art, school of which Raphael was crowning glory, 825

Umbriel, moon of Uranus, 3356

Umnabad, India, temple, 2955

Una and the Red Cross Knight, 5919

Unau, two-toed sloth, 2270, 2271

Uncama's Adventure, story, 4963

Uncle Remus, tales by Joel Chandler Harris, 4333

See also Brer Rabbit

Uncle Sam, who is he ? 5735

Uncle Tom's Cabin, 3245, 3795, 4333

Underground Railway, story of, 4375

longest tunnel, 6535

What is the Dead Man's Handle ? 2665

Arnos Grove Station, 6613

picture series, 4374-84

tunnelling, 6215-17, 6224
Undershot water-wheel, 6350
Underwood, Leon, British sculptor, 4896
Undine of the Lake, story, picture, 6570
Undset, Sigrid, Norwegian novelist, 4942
 portrait, 4937
Undulant Fever, germ traced in goat's milk by Sir David Bruce, 2827
Unesco, its work, 6480
Unicorn, what was it? 6466
Unicorn sheep, home in Nepal, 1285
Unilever Company, its formation, 4109
Unilever House, London, 6615
Union Island, colony of Britain, 3421
Union Jack, history of, 5246, 6961-62
 in time of Queen Anne, in colour, 6968
 present flag, 87; in colour, 6965
Union of South Africa: see South Africa
United Kingdom, what is it? 5820
 what is it worth? 4513
 See also British Isles
United Nations, organisation for World Peace, 4748, 6477
 Charter approved at San Francisco, 3800
 first General Assembly, 3800
 foundation, 3800
 Roman example, 1406, 1408
 World's hope, 3837
 flag, in colour, 6975
 General Assembly house, New York, 6123
 signing the Charter, 6477
United Service Museum, 4230, 4233
United States, the most important republic in the world: 3678
 agricultural progress, 3680
 area, 3673
 art: see American art
 "Big Inch" oil pipeline, 2966
 coal production, 2836
 colleges and universities, 3684
 communications, 3681
 Congress, composition of, 3682
 cotton production, 2562
 education, 3683
 farm "share-cropping" system, 3681
 farms, huge acreage, 3680
 film industry, 3686
 flag of the Stars and Stripes, history of, 1330, 6962-63
 flags of the States described, 6964
 flood at Johnstown, story, 6952
 forest resources, 3675
 frontier changes in 19th century, 3674
 historians of America, 4336
 history, 3791
 immigration, 2041, 3676, 3678
 industrial development, 2835, 3681
 in First World War, 1708, 3798
 in Second World War, 1943, 1946, 3798, 3799
 Japan attacks, 1943
 languages spoken, 3683
 Liberty Bell, 6345
 libraries, 3685
 mass-production method, 3681
 mineral resources, 3676
 motto on coins, 2174
 Negroes, status, 3678
 New Deal, 3799
 newspapers and magazines, 3685
 oil production, 2968
 Panama Canal, 4868
 poetry of America, 4202
 population, 1330, 2041, 3673
 prose literature, 4331
 racial distribution, 3677
 radio system, 3686
 railway accident averted, story, 6320
 railway statistics, 3950
 religions, 3685
 rice cultivation, story, 1700
 war between North and South, 3795
 War of Independence, 1330, 3793, 4126
 what were the Minute Men? 5252
Pictures of the United States
 air force insignia, in colour, 6380
 Bonneville Dam, Oregon, 5602
 Capitol, Washington, 3801
 cotton pickers in Georgia, 173
 cotton-picking machine, 173
 famous bridges, 534
 flags, in colour, 6969-71
 historical flags, in colour, 6971
 historical pictures, 3689, 3790, 3793, 3795, 3797, 6969-71

historic monuments, 3688
 Hoover Dam, Colorado River, 5603, 5975
 industrial life, scenes, 3692-93
 irrigation, 5974-75, 5977
 Liberty Statue, 3687
 oil wells, 3083-88
 oldest house, 3689
 rice cultivation, 1701
 scenes, 3801-08
 skyscrapers, 3675
 Spirit of America, embodied in Capitol picture, 3689
 White House, Washington, 3804
Maps of the United States
 animal life of the country, 3690-91
 general and political, 3694
 in colour, 7102
Universal Declaration of Human Rights, 6485
Universal Doctor, nickname of Albertus Magnus, 4833
Universal Joint, use on a motor-car, 4323
Universe, its boundlessness, 2989
 dimensions of starland, 3974
 Kelvin's estimate of number of stars, 3723
 width of Universe to which our Solar System belongs, 6970
 could a wireless wave go round the Universe? 6724
 what is the biggest single thing in the Universe? 6970
 journey of planets round Sun, 15
 map, 2995
 See also Solar System
Universities, arms, in colour, 4988-89
University College, Oxford, arms, in colour, 4988
University Wits, who they were, 857
Unknown Warrior, who suggested the idea of the Unknown Warrior? 6724
Unrta, United Nations Relief and Rehabilitation Administration, 3800
 dissolving of, 6486
Unterwalden, Swiss canton, the leader in war of independence, 4670
Unto This Last, Ruskin's book, 3220
Unwin, Mr. and Mrs., Cowper's friends at Olney, 2104
 portrait of Mrs. Unwin, 2101
Unwin, Sir Raymond, architect, 6609
Upper Silesia, famous German coal-field, 4428
Upper Volta, French West African colony, 6749
Uppingham School, arms, in colour, 4989
Uppsala, historic Swedish city, 5152
Up the Enchanted Mountain, story and picture, 1147
Up to London, game, with picture, 255
Ur, Abraham's native city, 6267, 6273, 6800, 6870
 discoveries, 5376, 6859, 6870, 6871
 copper lion from, 6863
 draughtboard from, 6869
 pictures of discoveries at, 6866
Ural Mountains, range between European Russia and Siberia, 6104, 6023
Ural owl, bird, 3501
Urania, muse of astronomy, 3517
Uranium, an element, 4222, 4224
 Canada's deposits, 2196
 power may be obtained by using it, 4813
 its sources, 396
Uranus, planet, description, 3356
 distance from Earth, 2990
 facts and figures, 7061
 its moons, 3118
 Sir W. Herschel discovers it, 3614
 path through space, 15
Urban District, what it is, 4411
Urbino, Michael Angelo's servant, 6186
Urdaneta, Andreas de: see De Urdaneta
Uredo spore, what it is, 1578
Urga: see Ulan Bator
Uri, Swiss canton, 4670
Uriah, the Hittite, 1988
Urial, Asiatic wild sheep, 1283
Urota sinope of Natal, moth, caterpillar, in colour, 6209
Ursula, St., daughter of a British chieftain, 6812
 pictures by Carpaccio, 932

Uruguay, South American republic' 7003, 7016
 flags, in colour, 6975
 scenes, 7015
Maps of Uruguay
 animal life of the country, 7029
 general and political, 7023
 in colour, 7104
 physical features, 7025
 plant life, 7027
Uther, father of King Arthur, 6941
Urumchi: see Tihwa
Urundi: see Ruanda-Urundi
Uskub, or Skoplye, ancient Yugoslav city, general view, 4563
U.S.S.R., Union of Soviet Socialist Republics, 6013
 Kremlin in Moscow, the seat of government, 6723
 part in Second World War, 5902
 air force insignia, in colour, 6930
 flags, in colour, 6975
 map of 16 Republics, 5904
 See also Russia
Utah, American State, 2375
 flag, in colour, 6971
 mountains, 2249
 Timpanagos Cave, 3808
Utrecht, Dutch city, 5531
 architecture of cathedral, 5992
 town hall and cathedral tower, 5538
Utrecht, Treaty of, Gibraltar ceded to Britain, 3418
Utrillo, Maurice, French painter, 3046
 his painting, Porte St. Martin, 3043
Uzbekistan, a republic of U.S.S.R., 6014
 map, 5904
V
Vaal, tributary of the Orange River, South Africa, scene on its banks, 3185
Vaccination, Jenner discovers it, 2508
 why does it save us from smallpox? 5492
Vachell, Horace Annesley, English novelist, 3713
Vacuum, comet's tail compared to, 3603
 in electric lamps, 1100
 Nature's dislike of, 5197
Von Guericke discovers its power, 5324, 5325
 what it is, 5244
Vacuum brake, 3944, 4072
 how it stops train, 4072
 position in railway engine, 3947
Vacuum tube: see X-rays
Vaduz, town of Liechtenstein, 6857
Vain Jackdaw, The, fable, 3744
Vaisya, agricultural caste of Hindus, 6854
Valdés, Armando Palacio, Spanish writer, 5059
 portrait, 5055
Valdivia, Pedro de: see De Valdivia
Valencia, Spanish city and Mediterranean port, 5278, 5931
 cathedral and archbishop's palace, 5284
 orange trade, 5271
 water seller, 5275
Valentine, Shakespearean character in Two Gentlemen of Verona, 6059
Valera, de: see De Valera
Valera, Juan, Spanish novelist, 5059
Valerian, died for his faith, 6810
Valerian, flower found in cornfields, 4543, 6009
 two kinds, in colour, 6128-9
Valerianus, Roman emperor, 2879
Valetta, capital of Malta-named after La Valette, 3418, 3420
 views, 3431
Valette, Jean de la, Grand Master of the Knights of St. John, 3420
Validen, Sultan, mosque in Istanbul 6141
Valldolid, historic cathedral and city of Spain, 5278, 5994, 6372
 public buildings, 5280, 5283, 5285
Valle Crucis Abbey, Denbighshire, 962
Valle-Inclan, Ramon del Spanish poet 5059
Valley Farm, The, why Constable's painting is so great, 2336
Valley of Desolation, Andean pass, 7041
Valmiki, supposed author of Ramayana, an Indian epic, 5874
Valparaiso, great port of Chile, 7018
 Plaza Victoria, 7014

Value, in economics, 5513, 5516
Valve, anatomy, one-way valves in veins discovered by Fabricius, 2533
Valve, mechanical, one-way valves on lifeboats, 5738
 wireless valve; see **Wireless**
X-ray valve, 2588
 on motor-cycle engine, 4327
 various kinds, 6352
Vampire, African false vampire, 290
Vampire bat, habits, 292
Vampire D. H., jet fighter plane, 4689
Vanbrugh, Sir John, architect who designed vast country mansions, 8469
Blenheim Palace, built by him, 6252
Vancouver, chief port of British Columbia, 2196

Pictures of Vancouver

Georgia Street, 2330
 harbour, 2200
 mountain peaks overlooking city, 2246
Vancouver Island, British Columbia, gigantic tree, 2373
 Malahat Drive scene, 2204
Vanda, legend of Polish princess, 5025
Vandals, route through Germany, 4310
 route through Spain, 5410
Van der Goes, Hugo, Flemish painter, 1056
 Adoration of the Shepherds, 1053
 Christ in the Manger, 1051
 Saint Cecilia, 1053
Van der Helst, portrait by him, 3657
Van der Weyden, Roger, one of the earliest Flemish painters, 1056, 1188, 6738
 Virgin and Child, painting, 1053
Van de Velde, William, the Younger, Calm Sea, painting, 3660
Van Diemen's Land, name given to Tasmania by Tasman, 2379
Van Dyck, Sir Anthony, Flemish portrait painter, 521, 1422, 1928

Pictures by Van Dyck

Andrea Brignole-Sale, 1423
 Charles I, 524
 Children of Charles I, 1421
 Frans Snyders and Wife, 1423
 Lady and Child, 3538
 William II of Orange and his wife, 3538
Van Dyke, Dr. Henry; see **Poetry Index**
Van Eyck, Hubert, Flemish painter, 1052, 6738
 Adoration of the Lamb, 1053
Van Eyck, Jan, Flemish painter, 1052, 1056, 1188
 Ghent Cathedral has splendid pictures by him, 5652
 famous portrait of John Arnolfini and his wife, 1053
Van Gogh, Vincent, French painter, 3046
 his painting, On the Way to Work, 3044
Van Goyen, Jan, Dutch landscape painter, 1428
Vanilla orchid, root's use, 458
Vanilla plant, description, 2806
Van Linges, Dutch family noted for stained-glass work in 17th century, 6731
Van Loon, Hendrik Willem, American historian, 4336
Van Mieris, Frans, the Elder, Dutch painter, 1428
Van Musschenbroek, Pieter, Dutch electrician and scientist, 236, 1348, 5326
Van Nieuwenhoven, portrait by Hans Memling, 1055
Van Ostade, Adrian, The Fiddler, painting by him, 3538
Van't Hoff, J. H., Dutch chemist, 4470
Van Tromp, Martin, Dutch admiral, 5530
Van Uyenbroch, Saskia, Rembrandt's wife, 6676
Vapour, why do we sometimes say gas and sometimes vapour? 5736
Vardar, river of Yugoslavia and Greece, 4533
Vardhamana, early Indian philosopher, founder of Jainism, 5080
Vardy, 18th-century architect, 6470
Varied thrush, bird, in colour, 3264
Variegated darling beetle, in colour, facing 6336A

Variegated periwinkle, flower, 6384
Variegated rough horsetail, flowerless plant, 3408
Varna, Bulgarian seaport on the Black Sea, 5774
Varro, Roman general defeated by Hannibal at Cannae, 4352
Varus, Germans defeat armies of, 1538
Vasa parrot, characteristics, 3500
Vasari, Giorgio, Italian painter, sculptor, and writer on art, 4720
Vasco da Gama, Portuguese navigator, 771, 5410
 found way round Cape of Good Hope, 2074, 6741
Vase, British Museum collection, 324
 earliest vases known, and Grecian vases, 322
 Ancient Greek, 323
 from Pompeii, 6990
 left by Romans in Britain, 723
 vases from Crete, 4025, 6985, 6991
Vase from the Arabian Sea, story, 1888
Vashti, wife of Ahasuerus, 3225
Vatican, The, wonderful palace of the Popes in Rome, 6112
 copy of Apollo Githaroedus, 4277
 copy of famous Apollo Belvedere, 4403
 Michael Angelo decorates chapel, 6186
 Mussolini creates a State, 4788
 Pinturicchio's compositions, 825
 Raphael's decorations, 826, 6118, 6191
 Raphael at work, 6187
 views, 4090, 6119, 6121
Vaughan, Henry; see **Poetry Index**
Vaz, Tristao, discovered Madeira in 1420; see page 772
Vecelli, Tiziano; see **Titian**
Vedder, Elihu, American subject painter, 3287
 The Cumaeen Sibyl, painting, 3292
Veering, what is meant by, 6721
Vega, Garcilaso de la; see **De la Vega**
Vega, Lope de, Spanish poet and dramatist, 3242
 Romeo and Juliet in verse, 4387
 wrote nearly 2000 plays, 5058
 portrait, 5055
Vegard, Professor, theory as to why stars twinkle, 5858
Vegetable, life-stories of, 2431
Vegetable marrow, member of Gourd family, 2432
Vegetables, right way to cook, with picture, 871
Vegetarian, athletic records claimed by vegetarians, 2558
 needs more salt than meat-eater, 1540
Vein, bleeding and how to stop it, 1196
 blueness explained, 944
 cannot we bleed unless a hole is made in our veins? 5368
Velasquez, Diego Rodriguez de, Spanish painter, 1308, 6679
 portrait, 6673
 visited by Philip IV, 6677

Pictures by Velasquez

Ferdinand of Austria, 75
 Fool of Coria, 3534
 Forge of Vulcan, 1307
 Infant Balthasar Carlos, 3778
 Menippus, 1314
 portraits, 1311, 1313-16
 The Costermonger, 3538
 The Old Cook, 3535
Velocity, its meaning in science, 4835
Velvett fiddler crab, picture, 5477
Vendace, Salmon family, 4982
 in colour, facing 5197
Vendée, La, district of France, 647
Vener, Lake, largest Scandinavian lake, in south-west Sweden, 5152
Venetian art, the rise of, 931
 Flemish art compared with, 1052
Venezia, old province of Italy, 4910
Venezia, peninsula in the Adriatic, Italy cedes it to Yugoslavia, 4909
Veneziano, Antonio, Florentine painter, 573
Venezuela, republic of South America, 898, 7022
 flags, in colour, 6775
 oil from under Lake Maracaibo, 3091

Maps of Venezuela

animal life of the country, 7028
 general and political, 7023
 in colour, 7104
 physical features, 7024
 plant life, 7026
Venice, city of Italy, at the head of the Adriatic Sea, 4913, 6113
 architecture, its characteristics, 272
 arose in the time of Attila the Hun, 2158
 art; see **Venetian art**
 distributing centre for goods from the East, 772, 3759
 Gothic churches, 5994
 great men of Venice, 271
 mosaic pavement in St. Mark's, 6732
 Rialto Bridge built on piles, 3787
 St. Mark's and its architecture, 5743
 Verrocchio's Colleoni statue, 4523
 wealth lost through geographical discoveries, 5018

Pictures of Venice

church of Santa Maria della Salute, 4919
 Colleoni statue, 4530
 general view, 4925
 Grand Canal, 4919
 house where Browning died, 3454
 Lion of St. Mark's, 4897
 modern garage, 4925
 mosaics, 445, 447
 palace and churches, 6109, 6115, 6121
 pont del Littorio, 4911
 Rialto Bridge, 6118
 St. Mark's Cathedral, 5747, 5749, 5752, 6733, 6739; St. Mark's School, 4925
 scenes in Venice, 273-276
Venice of the North, Bruges's old nickname, 5650
Veniero, Admiral, by Tintoretto, 278
Veni, Vidi, Vici, Julius Caesar's despatch to the Roman Senate, 5494
Venizelos, Eleutherios, Greek statesman, 5768
Ventilation, law in factories and shops needs revision, 1323
 in tunnels, 4378
 on board ship, 3574, 3708
 how factory air is conditioned, 6853
Ventrone, Isle of Wight, 1590
Ventricle, of the heart, its work, 1198
Ventriloquist, how to become a ventriloquist, 6541
Ventspils, port of Latvia, 6016
Venus, goddess of ancient Greece and Rome, 3517
 temple at Baalbek in Syria, 5504
 bronze head, 4274
 consoling Cupid, sculpture, 5257
 statue by Elia Candido, 5011
 The Mirror of Venus, painting by Sir E. Burne-Jones, 3525
 Towneley Venus, sculpture, 5134
 Venus and Anchises, painting by Sir W. Richmond, 3526
 Venus of Medici, sculpture, 4274
 See also **Venus of Milo**
Venus, planet, description, 3234
 distance from Sun, 8118
 facts and figures, 7061
 orbit seen from Earth, 3233
 orbits of Earth, Venus, Mercury, 3234
 path through space, 15, 17
 surface as imagined by astronomers, 3237
Venus and Adonis, poem by Shakespeare, 858
Venus fly-trap, insect-eating plant, 82
 204, 586, 205
Venus of Milo, immortal statue probably by pupil of Phidias, 4144
 D'Urville discovers statue in Melos, 5781, 6550
 sculpture in the Louvre, 4145
Venus's comb, shell, 1180
Venus's girdle, sea creature, 6697
Venus-shell, characteristics, 6582, 6580
Venus's looking-glass, flower, 4544
Vera Cruz, port of Mexico, 7007
 avenue of palms, 7011
Verberna, picture, 6378
Verdi, Giuseppe, Italian composer, 150
Verdon-Roe, Sir A., pioneer airman, 4111
Verdun, fortress on the Meuse, 1708
Verestchagin, Vasilii, Russian military painter, 3397

Napoleon before Moscow, 3779
 Napoleon in Moscow, 3402
 Napoleon's Retreat from Moscow, 1445
 Vergil: see Virgil
 Verkhoyansk, Siberia, one of the coldest places in the world, 5905, 6014
 Verlaine, Paul, French poet, 4458
 Vermeer, Jan, or Johannes, Dutch painter, 1428
 his paintings, *The Cook*, 3537
The Letter, 3778
The Pearl Necklace, 3659
 Vermont, American New England State, flag, in colour, 6970
 Vernal Falls, U.S.A., 3807
 Vernal grass, sweet scented, 3310
 Vernal quill, description, 5763, 5761
 Vernet, Claude Joseph, French marine and landscape painter, 1690
 Mediterranean scene, painting, 1683
 Vernet, Horace, French painter, 1808, 6781
 his paintings, *An Eastern Trader*, 1805
Battle of Bouvines, 1803
Taking of the Smala (Arab chieftain's camp), 1805
 Verona, city in Italy, Church of St. Anastasia, 5994
 Church of St. Zeno Maggiore, 5746
 Dante's statue in a courtyard, 4926
 old town hall, 6120
 Roman amphitheatre, 5495
 Veronal, coal-tar product, 4472
 Veronese, Paul Cagliari, Venetian painter, 282, 935
 work in Doges' Palace, Venice, 6114
 portrait, 271
 his paintings: *Industry*, 278
Madonna and Cuccina Family, 940
Marriage at Cana (in the Louvre), 278
Marriage at Cana (at Dresden), 938
Vision of the Cross, 940
 Verrocchio, Andrea, Florentine sculptor and painter, 6188
 sculptor who made the famous Colleoni statue at Venice, 272, 277, 4523
 artist's portrait, 271
 Colleoni Statue, 276, 4530
 modelling horse for Colleoni statue, 270
 sculpture of David, 4530
 Versailles, France, palace at, 1634, 6370
 Puget's wonderful statue group, the Milo of Crotona, 4645
 signing of peace in 1871 after Franco-Prussian war, 4229
 chateau, 6369
 Hall of Mirrors, 6364
 Palace chapel, 6362
 Versailles, Treaty of, 4050, 4300, 4621
 Verses, made with figures and letters, 506
 Vertebrates, backbone animals, 1565
 backboneless vertebrates, 5344
 backbones and brains, 452
 origin of vertebrates, 42, 1011
 animals with backbones, 451, 453
 Verticillated gecko, reptile, 4493
 Vertigo, what is meant by, 6232
 Vertumnus, god of gardens, 3520
 Verulamium, Roman name for St. Albans, 6996
 Verus, Lucius, Roman emperor, 2879
 Vervain, tree, related to teak, 3789
 Verviers, Belgian woollen centre, 5650
 Very broad ulva, seaweed, 3415
 Vesalius, Andreas, Flemish anatomist, 5569
 Vespasian, the Roman emperor, 2877, 1667, 2878
 Vespasian, Temple of, at Rome, 5511
 Vesper: see Hesperos
 Vespignano, Giotto's birthplace, 4718
 Vespillo burying beetle, in colour, 6335
 Vespucci, Amerigo, the Florentine navigator who gave his name to America, 4794
 explored coast of Venezuela, 1090
 Vesta, or Hestia, goddess of ancient Greece and Rome, 3516
 temples at Rome and Tivoli, 5504
 temple at Rome, 1781
 Vestitel anemone, in colour, 1554-5
 Vesuvianite, mineral, 1304
 Vesuvius, famous volcano near Naples, Italy, 2245, 4404, 4795, 4910
 great crater, 2245

views, 519, 4923
 Vetch, fodder plant, 2188, 4416, 4782
 flowers, 4412-3
 seeds spring out, 946
 species, in colour, 4906-8, 4418, 5642
 Vetchling, different kinds, 4416
 meadow, flower, 4412
 species, in colour, 4417, 5396, 6127
 Vetter, Lake, Swedish lake, 5152
 Vézelay, France, fine Romanesque church, 5748
 church, apse and front, 5739, 5750
 Via Dolorosa, Jerusalem, view, 3464
 Viaduct, on North Circular Road, 2167
 Silvertown Way, 2166
 under construction, 552
 Viborg, town of Denmark, 5163
 Vibration, of sound and light, 4099
 Viburnum plicatum, flower, 6382
 Vicar of Wakefield, The, novel by Oliver Goldsmith, 1979, 2343
 scene from the book, 2349
 Vice, deliberate badness, 1733
 patience may be a vice, 2602
 Vicenza, city of Venetia, Italy, 6114
 Basilica Palladiana, 6121
 Vickers Viking, aeroplane, at Lisbon Airport, 429
 Vickers Viscount, gas-turbine aeroplane, 4689
 Victor General, French general in Peninsular War, 1457
 Victor Emmanuel II, of Italy, 4787
 abdication, 4788
 meets Garibaldi, 4785
 statue and monument in Rome, 4922-3
 Victoria, queen of England, empress of India, 1705, 2947
 portrait, 1705
 Victoria, Australian State, 2572
 arms, in colour, 4985
 flag, in colour, 6967
 Melbourne, views, 2578
 Victoria, British Columbia, Parliament Buildings, 2330
 Victoria, capital of the Seychelles, 3421
 general view, 3435
 Victoria Bridge, over the St. Lawrence River, Canada, 555
 Victoria Embankment, London, seen from Waterloo Bridge, 4234
 Victoria Falls, on the Zambesi, Southern Rhodesia, 3002, 3312, 6742
 water-power possibilities, 6004
 pictures, 2500, 3313
 Victoria Nyanza, largest lake in Africa, 2494, 5490, 6742
 explored by Speke and Grant, 3006
 Victoria regia lily, 3056, 3053
 Victoria Tower, Houses of Parliament, 4230
 Victory, goddess of ancient Greece and Rome, 3517
 figure from Temple of Zeus, 4029
 Roman statue, 5136
 statue by Michael Angelo, 75
 Victory of Samothrace, 4275
 Victory, The, Nelson's flagship, in which he died at Trafalgar, 1455
 pictures, 1590, 4861
 log-book, 4864
 Vicugna, animal, 1533, 1532
 Vieillard Chrysanthème, story in French, 6195
 Vienna, capital of Austria, 4548
 Turkish attacks, 4294, 5027
 Haydn and Beethoven under fire, 143
 public buildings, 4558-60
 St. Stephen's Cathedral, 6001
 Vienna, Congress of, conference which distributed the spoils of the French Empire after Napoleon's defeat, 4297
 picture, 4291
 Vietnam, state of Indo-China, 6513
 Vietnamese, town of Indo-China, 6513
 Vignola, Barozzi da: see Da Vignola
 Vigny, Alfred Victor de, French writer and poet, 4457
 Vigo, Spanish port, 5278
 Vikings, America reached by them, 500
 years before Columbus, 770, 1014
 exploits of the Vikings, 5145
 Russia calls in Rurik, 5893
 sailing to America, 1019
 Viking type, 3029
 See also Danes and Norsemen

Viking and his Enchanted Ship, story and picture, 2143
 Village, in 18th century, 1332
 ancient British, 724
 Village of Heroes, story, 2020
 Villager and the Viper, fable, 3866
 Villanova de Portimao, Spain, 5405
 Villiers, George: see Buckingham, George Villiers, Duke of
 Villon, François, one of the earliest French poets, 4454
 Vilna, Lithuania: see Wilno
 Vincent, George, English painter, 2306
 Vincent de Beauvais, Louis IX being taught by him, 2258
 Vinci, Leonardo da: see Leonardo
 Vine: see Grape
 Vinegar Bible, what it is, 5731
 Vinegar-press, in Rumania, 5782
 Vinje, Aasmund, peasant poet, 4940
 Viola, Shakespearean character in Twelfth Night, 6049
 Viola, plant, 6280, 6379
 Violet, different colours and kinds, 4284
 heathland members of family, 5023
 species that grow in woods, 4781

Pictures of the Violet
 seeds thrown out, 946
 single violet, 6379
 various kinds, in colour, 4285, 4907, 5141, 6128-9
 Violet gallinule, bird, in colour, 3144
 Violet golden-surface beetle, in colour, 6336A
 Violets, sculpture by Raoul Larche, 5258
 Violin, famous makers, 3858
 how to make, with pictures, 249
 how vibrations of the strings produce different notes, 3539, 6307, 6425
 value varies with shape and size of body, 440
 See also Fiddle
 Violin beetle, habits of, 6330
 Viollet-le-Duc, Eugène, French architect, 6357
 Viper, species of Snake, 4620
 in colour, facing 4469
 various kinds, 4617, 4619
 Viper's bugloss, general description and origin of name, 4416
 flower, in colour, 4419
 Viper weever, fish, in colour, 5098
 Virgil, Roman poet, 5430
 portrait, 5425
 with Horace in Rome, 5429
 See also Æneid and Poetry Index
 Virginal, William Byrd playing one, 142
 Virginia, American State and the first colony of the British Empire, 1205, 2075, 3791, 5207
 State flag, in colour, 6970
 Virginia creeper, fixing discs grow away from light, 585
 related to Grape, 1818
 Virginia Creeper, The, story, 6683
 Virginian eagle owl, bird, 3501
 Virginian nightingale: see Cardinal bird
 Virginian opossum, picture, 2396
 Virginian rail, bird, in colour, 3263
 Virgin Islands, British West Indian group, 3554
 map, general, 7030
 Virgin Mary: see Mary, the Mother of Jesus
 Virgin's bower, feathered seed, 947
 Virgin Soil, Turgenev's story, 4818
 Virta, Russian writer, 4820
 Virtue, qualities of a man, 1733
 wrong committed in its name, 2801
 Virus, benefits obtained from radio-active virus, 4814
 what is a virus? 4017
 Visby, port of Gotland, Sweden, 5152
 city wall, 5160
 Viscacha, animal, 1036, 1032
 Vischer, Peter, German sculptor and bronze worker, 3558, 4644, 6740
 Shrine of St. Sebald, 4645
 portrait, 3855
 Visconti, his architectural work on the Louvre, 6370
 Viscount, coat-of-arms, in colour, 4987
 coronet, in colour, 4986
 Viscount, Vickers gas-turbine aeroplane, 4689

- Viscous, what it means, 3284
 Vishnu, god of Indian trinity, 5983
 Vishnu moth, of India, caterpillar, in colour, 6210
 Vision, bodily and spiritual, 1359
 all people vary in the strength of their vision, 922
 light and vision experiment, 4098
 range of vision at various heights, 6719
 Visitation, painting by Ghirlandaio, 567
 Vistula, river of eastern Europe, flowing through Poland, 5032
 Visu, story of, 1148
 Visualisation, what is meant by, 4149
 Vital point, what it is, 1322
 Vitamin, potatoes contain, 1436, 2786
 value to health, 4471
 what is a vitamin? 6353
 Vita Nuova, Dante's story of his love for an ideal woman, 4582
 Vitellius, Roman emperor, 2878
 Vitruvius, Roman writer on architecture, 5496
 Vivarini, Alvise, Venetian painter, 932
 Vivarini, Bartolommeo, founder of school of painting on Murano, 932
 Vivien, Merlin imprisoned by, 6943
 Viviparous bistort, member of persicaria family described, 5520
 Power, in colour, 5642
 Vizagapatt, Indian port, 2810
 Vladimir, St., first Christian prince of Russia, 5893
 Vladivostok, important port of eastern Siberia, 6024
 Vlaminck, French artist, 3046
 Vlemming, Captain, Dutch explorer in Australia, 2379
 Vlonë, or Valona, seaport of Albania, 5775
 Vocal cord, 1320, 1322, 3539
 swollen when we have a cold, 2540
 producing sound and resting, 3539
 Voice, wonderful vocal cords that surpass all musical instruments, 6427
 how to make eidophone, picture, 630
 production explained, 3539
 transmission by wireless, 2215
 has a fish a voice? 6230
 why does a boy's voice break? 1794
 why does it seem louder when ears are covered by hands? 5619
 why do voices sound hollow in an empty hall? 2664
 Voice box: see Larynx
 Volatile, meaning of, 2921, 6100
 Volcano, origin and description, 2245
 Australia's volcanoes now extinct, 2443
 changed Earth's surface, 518
 harnessing its heat and power, 4811
 heights of volcanoes, 7060
 lunar volcanoes, 3484
 mythological beliefs, 3531
 New Zealand's volcanoes, 2694
 how is a volcano formed? 2788
 Pictures of Volcanoes
 formerly in British Isles, 726-27
 Low fires burst from the Earth, in colour, facing 393
 Kilauca, molten lava pours forth, 517
 lunar, 3483
 Popocatepetl, 7012
 Stromboli and others, 2132, 2247-9, 2702
 Vesuvius, 519, 2245
 volcanic rock, 2004
 Vol: see Water rat
 Volendam, Holland, harbour, 5533
 people of Volendam, 5525, 5529
 Volga, longest river of Russia and Europe, 6017
 Volos, seaport of Greece, 5768
 Volscians, enemies of Rome, 5859
 Volt, definition of, 7071
 Volta, Count Alessandro, Italian scientist, 481, 1348, 5328
 portrait, 5323
 Voltage, electric, 810, 978
 high voltage for electric railways, 3594
 high voltage generated by modern dynamos, 1348
 Voltaire, François, French philosopher, satirist, poet, essayist, and writer of plays, 647, 4456
 portraits, 647, 4453
 Volterra, Italy, Etruscan relics found, 6994
 Volucella feathered, insect, in colour, 5714
 Voluntas, Latin for Will, 1810
 Voluta, shell, 1178
 Von Dalin, Olaf, Swedish historian and poet, 4942
 Von der Vogelweide, Walther: see Walther von der Vogelweide
 Von Guericke: see Guericke
 Von Heidenstam, Verner, poet and novelist, 4942
 Von Helmholtz: see Helmholtz
 Von Humboldt: see Humboldt
 Von Jolly, Professor, density and mass of Earth worked out by, 5244
 Von Schraudolph, J., Jesus speaking to Peter, painting by, 4213
 Von Uhde, F., Last Supper, painting by him, 4703
 Nativty, painting, 3594
 Von Winkelreid, Arnold: see Winkelreid
 Voronezh, Russia, scene, 6029
 Vote, why the people of Washington have no vote, 5982
 Voyage of Maeldune, story, 6567
 Voysey, C. F. A., architect, 6610
 house at Frinton, designed by, 6607
 Vries, de: see De Vries
 V-toothed gearing, 6350
 Vuillard, Edouard, French artist, 3042
 Vulcan, god of ancient Greece and Rome, 3516
 Forge of Vulcan, painting by Velasquez, 1307
 Vulcan, unknown planet, 3234
 Vulcanite, experiment with it, 1349
 its nature, manufacture, and uses, 2033
 Goodyear discovered how to make vulcanite, 1166
 electrified by friction, 1349
 Vulcanisation: see Rubber
 Vulture, bird, characteristics, 3632
 northern limit in Italy, 4791
 various species, 3633, 3635-6
 Vyrnwy Valley, before and after dam was built, 4505
 W
 Waddesdon Manor, Bucks, 6250
 Wade, General, his fine military roads in Scotland, 2157
 Wadham College, Oxford, arms, in colour, 4988
 Wage, demand and supply affect, 5640
 workers share of production, 5638
 Wagner, Alexander, Chariot Race, painting by him, 1907
 Wagner, Richard, composer, 148, 4696
 portrait, 145
 Wagtail, bird, species, 3016
 Australian wagtail, 3017
 blue-headed, in colour, 2897
 great, in colour, 2899
 white, in colour, 3024
 yellow, in colour, 3022
 Waialeale, Hawaii, wettest spot on Earth, 5864
 Waipatu River, New Zealand, 2705
 Waiau River, New Zealand, scene, 2498
 Waidhofenzell Castle, Austria, 4559
 Waibi gold mines, New Zealand, 2705
 Waikato River, New Zealand, 2694
 hydro-electric power-station at Arapuni, 2695
 map showing course, 2700
 Wairua Falls, New Zealand, 2702
 Wake Family, arms, in colour, 4987
 Wakefield, Yorkshire, mysteries of Wakefield, 857
 arms, in colour, 4991
 Wakefield, Edward Gibbon, English colonist, New Zealand development plan, 2696
 Waking, what wakes me up? 64
 Wales, western principality of Great Britain, 216
 ancient beehive-shaped huts in, 5376
 archaeological discoveries, 6998
 geology, 885, 1136, 1257
 Red Dragon of, origin of standard, 6961
 seen from the sea, 339
 South Wales coalfields, 216
 union with England, 951
 flags, in colour, 6965
 slate quarrying near Snowdon, 5848
 views, 1459-1462
 Maps of Wales
 general, in colour, 7081
 historical events, 599
 natural features, 726, 727
 physical features, in colour, 7080
 See also British Isles
 Wales, Prince of: see Prince of Wales
 Wales, University of, arms, in colour, 4989
 Walker, Frederick, Rainy Day, painting by him, 2865
 Walker, John, first lucifer match invented by him, 1675
 Walking, how to find out how fast one walks, 253
 safety first rules, 6837
 Wonder Questions
 could a man ever walk from France to England? 5248
 could we walk without our toes? 60
 why cannot we walk straight when we shut our eyes? 4518
 why do we go slower uphill? 5245
 why do we swing our arms? 680
 why is it easier to walk on a rough surface than on a smooth one? 4762
 why must a baby learn to walk? 2415
 Wall, Roman walls in Britain, 722-723
 what does the pattern in a brick wall mean? 2414
 Wallaby, animal, 2389
 various species, 2393-5
 Wallace, Dr. Alfred Russel, Darwin's theory supported by him, 5576
 on survival of fittest in plant life, 1326
 on the bamboo, 2940
 thinks British Isles submerged during Glacial Period, 5248
 Wallace, William, Scottish patriot, 894
 his monument on Abbey Craig, near Stirling, 952, 1337
 portrait, 889
 Wallace's belus weevil, in colour, 6336A
 Wallace's Line, what is it? 4642, 5541
 position on map, 2451
 Wallachia, part of Rumania lying between the Danube and the Carpathians, 5771, 5896
 Wallachian sheep, 1285, 1282
 Wall barley, 582
 Wall butterfly, with egg, caterpillar, and chrysalis, in colour, 6206
 Wall creeper, bird, habits, 3018
 Walled coriander anemone, flower, in colour, 1554
 Wallenstein, Albrecht von, Austrian general, 4294
 Wallflower, Crucifer family, 4415
 double species, 6384
 Wall gecko, reptile, 4492
 Wall hawkweed, member of Composite family, described, 6022
 flower, in colour, 5142
 Wallis, Dr. John, portrait by Kneller, 1926
 Wall lizard, 4492
 Wallons, the people of South-East Belgium, 5646
 Wall-paintings, Norman, in British churches, 1923
 Wall-pepper: see Biting stonecrop
 Walmer Castle, Kent, where Duke of Wellington died, 344
 Walnut, different kinds, 2066
 uses of wood, 3788
 fruit growing 2067
 fruit, in colour, 3670
 tree, leaves, and flowers, 3550
 Walpole, Horace, English author and wit, 2548, 3860, 5692; portrait, 2349
 Walpole, Hugh, English novelist, 3714
 Walpole, Sir Robert, English statesman, 1828, 2134
 mansion designed for him at Houghton, Norfolk, 6470
 Walrus, characteristics, food, and habits, 910
 pictures, 907, 909
 Walsall, town in South Staffordshire, story of Sister Dora, 6824
 Walschaerts valve gear, position in railway engine, 3946

Walsingham, Alan de, English medieval craftsman, 3855
 Walter, John, English newspaper owner, 1518
 Walter the Penniless, Peter the Hermit's lieutenant in the first Crusade, 3268
 Walther von der Vogelweide, early German lyric poet, 4696
 Walton Bridge, designed by James Paine, 6471
 Walton, Dr. Ernest, British scientist, atom experiments, 6316
 Walworth, William, dagger with which he slew Wat Tyler, 4862
 Wand, trick, and picture, 4217
 wizard's, 631
 Wandering halfpenny, trick, 5688
 Wandering Jew, The, legend, 1272
 Wandering Shepherdess, The, story, 414
 Wanderoo monkey, 164
 Want, why do we not get all we want? 5004
 Wantage, King Alfred born at Wantage in 849: see page 2905
 Wapiti, characteristics of the deer of North America 1402, 1399
 War, United Nations pledge against it, 6479
 children learn military discipline in Germany, 4303
 foolish ambitions that led to our early wars with France, 958
 man first makes war, 170
 petty wars between nobles in Europe in Middle Ages, 3506
 can a nation be made to pay for a war? 6354
 symbolical picture, 3833
 War and Peace, Tolstoy's novel, 4818
 Warble-fly 6088, 6082
 Warbler, bird family, 8137
 route of migration, 223
 species in colour, 2766, 2897-8, 2900, 3023, 3143, 3262-3
 species with young, 3139
 Ward, Dr. Hayes, helped to prove Hamath's stones to be the work of Hittites, 6872
 Ward, what a town's ward is, 4408
 Wardle, Arthur, Diana Resting, painting by him, 3526
 Ware, Great Bed of, now in Victoria and Albert Museum, 6862
 Warkworth, Northumberland, castle, 1951
 Warm hands, warm, rhyme, music, and picture, 6159
 Warmth, where does our warmth come from? 5128
 Warner, Susan (Elizabeth Wetherell): see Poetry Index
 Warning, game, 3724
 War Office, William Young planned Whitehall building, 4330
 flags, in colour, 6966
 War memorial, the Scottish national, at Edinburgh, 1337
 Warsaw, capital of Poland, 5032
 Jewish boys at school, 5024
 scenes, 5034, 5038
 Wars of the Roses, between Lancaster (red rose), and York (white rose), 960
 effect on beginnings of English art, 1924
 Malory fought on Lancastrian side, 366
 story of plucking of roses in garden of Temple Church, 5868, 955
 Wars, World: see World War, First and World War, Second.
 Wart hog, characteristics, 1658, 1657
 Water-anemone, in colour, 1553
 Warwick, capital of Warwickshire, architecture of castle, 6235, 1836, 6245
 Beauchamp Chapel 5874
 Tudor House, 1085
 Warwickshire, midland county of England, places in, 7173
 road map, 7128
 Wash, The, shallow bay of the North Sea, 836
 Washington, Booker, American Negro educationist, 3246, 3239
 Washington, George, American soldier and statesman, first president of the United States, 1837, 3794

Pictures of George Washington entering New York, 3797

leading army across Delaware, 1327
 making a speech, 1637
 portraits, 3791, 4134
 scenes in his life, 1641-3
 statue in London, 1642
 Sulgrave Manor, home of ancestors, 1835
 Washington, capital of the United States, in the federal District of Columbia (D.C.), 3795
 why do the people have no vote? 5982
 Abraham Lincoln memorial, 3688
 Capitol, 3801
 column, 3688
 General Grant monument, 3688
 Supreme Court, 3804
 White House, 3804
 Washington (State), American western State, flag, in colour, 6971
 view of Tacoma, 3805
 waterfall near Lake Chelan, 3807
 Washington Agreement, Japanese navy limited by, 6620
 Washington Irving Island, 6436
 Wasp, characteristics, 5841
 nest of wood-paper, 1294
 spiders used as food for grubs, 38
 why does a wasp's poison not hurt the wasp? 2415
 all kinds, 5839, 5843; in colour, 5714
 fertilising fig, 1934
 nests of, 5834
 Wasps, The, story, 6819
 Wasserhuh Tunnel, 6595
 Watch, how to use a watch as a compass and picture, 4215
 repeater watch, 6832
 what is the oldest watch found in England? 2662
 what makes a watch go? 1184
 how it works, 6836
 Wat Cheng Temple, Siam, 5082
 Wateler Peace Prize, what it is, 6852
 Water, picture story, 4502
 a gas and solid, 3331
 as steam, 8205
 boiling and freezing, 5318, 5321
 boiling point, 3208, 4998
 Cavendish explains its nature, 6310
 energy in a glass of water, 1614
 evaporation, 314
 experiments with air and water, 629
 fresh water from sea water, 3574
 life's need of water, 328, 830, 1432, 2182
 magic of a glass of water, 751
 origin of all life, 4855
 power it can generate, 106, 4810
 specific gravity, 4954
 theory of Thales about it, 672
 unit of mass used in science, 4834
 weight of a cubic foot; weight of a gallon; weights of salt water and fresh water compared: see weight of materials, 7074

Wonder Questions

can a river flow uphill, 6600
 can fresh water be found in the sea? 4638
 does water travel with the waves? 6597
 how does still water reflect a distant scene? 310
 how much water is there in the sea? 560
 is water anywhere except in our world? 5126
 what is the difference between hard water and soft? 1306
 what makes water gurgle when it comes out of a bottle? 686
 what makes water ripple when we throw a stone into it? 5124
 where does spring-water come from? 4136
 where does the water go at low tide? 190
 where do the colours come from in a stagnant pool? 6353
 why cannot boiling water be made hotter? 5367
 why cannot we breathe under water? 5124
 why does a bottle full of hot water keep hot longer than one half full? 4996
 why does a steel ship float? 6856
 why does boiling water feel cold at first touch? 6734
 why does boiling water make bubbles? 1918

why does hot water clean things better than cold? 2541
 why does hot water crack thick glass more easily than thin? 5364
 why does it crackle when a red-hot poker is put in it? 6463
 why does it take up more room when hot? 6250
 why does not oil mix with water? 189
 why does not the water fall out of a revolving pail? 8044
 why does shallow water freeze first? 2788
 why does the stream run faster in the middle? 2662
 why does water always seem shallower than it is? 1921
 why does water boil when put on lime? 6227
 why does water find its own level? 1793
 why does water quench fire? 4130
 why do we hear better on water than on land? 312
 why do we put a spoon in a glass before pouring in hot water? 3643
 why has water no taste? 6230
 why is it easier to swim in salt water than in fresh? 6723
 why is its surface always level? 817
 why is running water purer? 2918

Pictures

experiments with air and water, 629
 different forms, 4502
 how a river runs uphill, 6601
 how it is raised by suction, 923
 illusion of shallowness, diagram, 1921
 picture story, 4504-12
 reservoirs under London, 4512
 testing London's water at a laboratory, 4503
 See also Irrigation
 Water avens, what it is like, 6008
 flower, in colour, 6130
 Water bedstraw, what it is like, 6012
 flower, in colour, 6129
 Water beetle, insect, 6330
 foot, under microscope, 1914
 Water-boatman, insect, in colour, 5714
 Water bouget, heraldic charge, 926
 Waterbuck, animal, 1400
 Water-bug, tropical species, 5719
 Water-clock, early time-telling instrument, 2297
 Water-colour painting, rise of art in England, 2420
 school of English water-colourists, 2425
 Water-cooling, used for motor-car engines, 4324
 Watercress, what it is like, 6012, 6009
 acres of beds near London, 2440
 cutting on Norfolk farm, 2431
 Water crowfoot, 6010, 6009
 Water deer, Chinese species, 1404
 Water dropwort, plant, 6012, 6009
 Water-elder: see Guelder rose
 Waterfalls, power from them, 610
 heights of famous waterfalls, 7059
 See also separate names, such as Niagara Falls, Victoria Falls, and so on
 Water figwort, 6011, 6009
 Water flea, 5480, 5479, 1914
 Waterford, capital of Co. Waterford, Ireland, 3068
 arms, in colour, 4991
 Water gas, manufacture, 3335
 plant for making, 3449, 3451
 Water hemlock, what it is like, 5888
 flower, in colour, 6128
 Water-hen: see Water-rail
 Waterhouse, John William, English classical painter, 2544
 Consulting the Oracle, 2556
 Diogenes in his Tub, 5003
 Echo and Narcissus, 3522
 Hylas and the Nymphs, 3522
 Psyche's Garden, 3523
 Water hyacinth, American river blocked by it, and picture, 3177
 Water jacket, of motor-car engine, what it is, 4321
 Water-lily, how it grows, 831, 1068, 6007
 flowers, 6007, 6384; yellow, in colour, 6129
 section, under microscope, 1911
 Water-line, why have ships a water-line? 6347

- Waterloo, battle of**, final defeat of Napoleon, on June 18, 1815, by Wellington, 1458, 4048
 pictures, 1447, 1456, 5656
Waterloo Bridge, London, 1221, 6613
Watermarks, how they are made, 1552
Water Mill, painting by Hobbema, 3660
Water mint, flower, in colour, 6129
Water moccasin, snake, 4619
Water moss, flowerless plant, 3408
Water opossum, or Yapock, 2394
Water ouzel, bird, 3025, 3019
Water-parsnip, narrow-leaved, flower, in colour, 6129
Water pheasant : see Jacana
Water-pipes, why does the thaw burst the water-pipes? 2172
Water-plantain, what it is like, 6008
 flower, in colour, 6130
Water power, alpine hydro-electric stations and dams, 4172
 electricity production, 1348, 2494
 extensive use in Italy, 4913
 Russia's resources, 6023
 Sweden's resources, 5151
 transmission of electricity, 610, 853
 United States' vast resources, 3875
 pictures, 5601-5611
Waterproof, manufacture, 1165
 is a leaf waterproof? 3162
Water-rail, or water-hen, 4004
 in colour, 3023
Water-rat, or Vole, various species, 1035, 1032
Water-scorpion, in colour, 5714, 5719
 under microscope, 1915
Water-seller, painting, by Velasquez, 6679
Water-shrew, 293
Water-snake, habits, 4618
Waters of Oblivion, The, story, 6818
Water spider, underwater home, 5595
 taking air bubble to nest, 5591
Waterspout, what is it? 681, 2619
Water supply, on locomotives, 4071
 on ships, 3574, 3709
 pictures, 4504-4512
 See also Dam, and Irrigation
Water-tube boiler, who invented it? 5373
Water-turbine, pictures, 5611, 6351
 Westinghouse, with generator, 5610
Water vapour, condensation as rain, 2820, 2865
Water violet, what it is like, 6010
 flower, in colour, 6129
Water vole : see Water-rat
Waterways of England, 7177
Water wheel, largest in the world, 5969
 different kinds, 5601, 6330, 6351
Watkins, H. G., English Arctic explorer, 6444
Watling Street, boundary between Saxon and Danish England in time of King Alfred, 2157
Watson, Harry, his painting, Lincoln and his Stepmother, 1645
Watson, Spencer, English artist, 2678
Watson, Thomas, Graham Bell's assistant, 1842
Watson, Sir William, English poet, 4081; portrait, 4077
 See also Poetry Index
Watson, Sir William, scientist, electrical discoveries of, 1801, 5326, 5323
Watt, James, Scottish engineer, 2746, 3210, 5441
 Caledonian Canal suggested by, 4867
 use of iron columns in factory, 6806
 value of horse-power fixed, 1922
 scenes in his life, 2749, 2751, 4129
 statue by Henry Fehr, 4770
Watt, definition : see units of electricity, 7071
half-watt lamp, 1100
Watteau, Jean Antoine, French painter, 1684
 his paintings, Dancing Girl, 1688
 Gilles and his Family, 1680
 The Actor Gilles, 3170
Watt-hour, definition : see units of electricity, 7071
Watts, George Frederick, English painter of portraits and symbolic subjects, 2546
 his paintings: Cardinal Manning, 2551
Hope, 2107
Physical Energy, sculpture, 4772
Sir Galahad, 6948
The Dove that Returned Not, 376
Watts, Dr. Isaac, English theologian and writer of hymns, 1757; portrait, 1759
 See also Poetry Index
Wat Tyler's Rebellion (1381), a rising of the English peasantry, 956
Waugh, Benjamin : see Poetry Index
Waugh, Edwin : see Poetry Index
Wave (of light and power), 105, 1725
 how many waves are there in a beam of light? 3650
 See also Light ; Sound ; Wireless telegraph, and so on
Wave (of sea), does water travel with it? 6597
 is every seventh sea wave bigger? 442
Waved muzzlet anemone, flower, in colour, 1554
Wavell, Lord, leader of Africa forces during Second World War, 1942
Wave lite, phosphate of aluminium, in colour, 1303
Waverley, Scott's novel, 2010, 2719
Waverley Abbey, in Surrey, 964
Waverley Novels, written between 1814 and 1829 by Sir Walter Scott, 2719
Wax, coloured pencils partly made of it, 2040
 use of wax in our ears, 3298
Waxwing, bird, distribution, 3025, 3017
Wayfaring tree, 4284
 fruit, in colour, 3667
Wealden clay, map of strata in Great Britain, 1634
Wealth, Commonwealth's resources, 6003
 creation of wealth, 5137
 Industrial Revolution enriches England, 4500
 its distribution, 5637
 its economics, 5015
 nation's wealth is well-directed hard work, 5883
 spending and saving, 5755
 United Kingdom's wealth per head of population, 5413
Wealth of Nations, The, Adam Smith's book and its effect on England in 19th century, 1582
Weapon, earliest known weapons, 194
Wearin' o' the Green, The, Irish patriotic song, 1268
Weasel, species and characteristics, 792
 on the prowl, 788
Weather, rainy weather, 2865
 climate and weather, 2817
 close weather unhealthy, 1433
 foretold by barometer, 5199
 how to study the weather, 3721
 how does the seaweed tell the weather? 4020
 what do the words on a weather map mean? 6721
 why are some days hotter than others? 5000
 effect on sound, 4641
 British Isles, maps, 6722-23
Weather-ship, radar equipment on, 2462
Weatherley, Frederic, English composer, 1268
Weatherly, Frederic E. : see Poetry Index
Weaver, English and Flemish weavers in Middle Ages, 800
 weaver and his cloth, puzzle and picture, 3842, 3966
Weaver birds, characteristics, 2895
 nests, 2891, 2903
Weaving, glass threads used in, 3884
 Maltese girls weaving baskets, 3431
Webb, Sir Aston, English architect, designer of South Kensington Museum, 4230
 work on Buckingham Palace, 6472
Webb, John, English architect, 6241
Webb, Philip, nineteenth-century architect, 6606, 6609
 house designed by, 6607
Weber, Baron Karl, German composer, 150; portrait, 145
Web-footed shrew, purpose of sucker-pads on feet, 296
Web of Cloth, story, 5707
Webster, Daniel, on Justice, 243
Webster, John : see Poetry Index
Webster, Thomas, Dame's School, painting by him, 4959
Village Choir, painting, 6305
Weddell, James, English explorer in the Antarctic, 1823 : see page 6549
 portrait, 6549
Wedding Feast, The, story, 1274
Wedding rings, why do women wear wedding rings? 4890
Wedge shell, 6580
Wedgwood, Josiah, English potter, 302, 3862, 6737, 3855
Wednesday, name derived from Woden, 588, 2775, 5222
 Weed, defined and described, 3177
 invasion of countries by weeds, 1065
 lake in Battersea Park covered with American pond weed, 3179
 water hyacinths choking river, 3177
Week, artificial length of time, 268
Weeping, supra-renal glands cause, 3175
 eye glands where tears are made, 3664
Weeping Women, sarcophagus, 4402
Weever, greater, fish, 5105
 viper, in colour, 5098
Weevil, insects, in colour, 6327, 6335
 cotton boll weevil, life-story, 6457
Wehle, J. R., Jesus in Cornfield, painting by him, 4461
Weight, distinguished from mass, 394
 gravitation and weight, 682, 4835
 specific gravity explained, 4953
Wonder Questions
 do things weigh heavier or lighter when hot or cold? 684
 has the Earth ever been weighed? 5243
Weights and Measures, coins useful in weighing objects, 4344
 how we are protected from false ones, 4410
 See also page 7069
Weihaiwei, port of Shantung, China, occupied by Great Britain, 6504
Weimar, German town in Thuringia, 4300
 Shakespeare statue, 4477
Weiss, Professor, unique moths discovered near Manchester, 6198
Weisshorn, Swiss peak in the Pennine Alps, picture, 2246
Weka-rail, power of flight lost, 4004
Welding, electric furnace used, 1230
 electric heat used in, 2718
Welhaven, Johan, Norwegian lyric poet, 4940
Well, famous Well of Moses at Champ-mol monastery, 4644
 Truth at the bottom of the Well, 495
Welland Ship Canal, Canada, aerial view of lock, 4877
Weller, Sam, Mr. Pickwick's servant, 2847
Wellesley, Sir Arthur : see Wellington
Wellington, Arthur Wellesley, Duke of, British general, died at Walmer Castle, 344
 portrait, 4134
 riding in steam coach, 2745
 shows his mother his new uniform, 1446
 statue in London, 1222
 at Waterloo, 1447, 1456, 4057
Wellington, capital of New Zealand, on North Island, 2695
 Cenotaph and Parliament Buildings 2697
 general view, 2704
 War Memorial Carillon Tower, 2697
Wellington Mount, Tasmania, 2578
Wellington boots, named after Iron Duke, 6232
Wells, city in Somerset, Early English Gothic work in cathedral, 5871
 arms, in colour, 4991
 views of cathedral, 5865, 5876
Wells, H. G., English novelist, 3713
 portrait, 3711
Welsbach, Auer von, incandescent gas mantle inventor, 3336
Welsh black cattle, relic of Celtic and Roman cattle-breeding, 1154
Welsh dragon: see Red Dragon
Welwyn Garden City, Herts, example of Town Planning, 6609

Wembly, Empire Swimming Pool, 6608, 6613

See also British Empire Exhibition
Wencelas, King, painting by Sheridan Knowles, 3932

Wenchow, port in western China, 6502

Wensleydale ram, 1280

Westworth, Thomas : see Strafford

Wergeland, Henrik, Norwegian poet, 4940

portrait, 4937

Weser, German river, 4422

Wesley, Charles, English Methodist clergyman and reformer, 1757

portrait, 1759

See also Poetry Index
Wesley, John, English clergyman, religious reformer, and writer of hymns, 1757, 4256, 4501, 5448

diary of, 1852

his homes and haunts, 5446

portraits, 1759, 4131

preaching to village folk, 4257, 5449, frontis. volume 10

statue in City Road, London, 1222

Wesley Chapel, London, 5446

Wessel, Johan Herman, Norwegian poet and writer of plays, 4939

Wesselenyi, Baron Nicholas, Hungarian patriot, with picture, 3371

Wessex, ancient Saxon kingdom, 558

West, Sir Benjamin, English painter, 3286

West, Charles, English engineer, 1603

Westall, R., Wolsey at Leicester Abbey, painting by him, 1072

Western Australia, Australian State, 2575

Pictures of Western Australia

Calgardup Cave stalactites, 2003

Dampier with Aborigines, 2084

flag, in colour, 6967

gold mine in Kalgoolie, 2577

logs being hauled, 2447

Perth, the capital, 2578

scenes, 2580

Western Avenue, London arterial road with cyclist's track, 2165

Western Pacific High Commissioner, flag, in colour, 6967

Wester Region, British Railways Group, 3950

Caerphilly Castle locomotive, 4069

coaches being slipped, 4076

rail-car, 4075

safety device on rails, 4073

travelling cranes, 4074

West India Docks, London, shipping, 5261

West Indies, archipelago which separates the Atlantic from the Gulf of Mexico and the Caribbean Sea, 3553

explored and named by Columbus, 770, 1018

scenes, 3557-62

sugar refinery, 2289

map, general and political, 7030

map, in colour, 7103

See also names of islands

Westinghouse, George, American engineer, 2756

Westinghouse brake, its working, 2756

3944, with picture, 4072

Westinghouse dynamo, 609

Westland Sikorsky, helicopter, 4687

Westley, early English architect, 6240

West Malling Abbey, Kent, 964

Westminster, Boadicea statue, 891

church of St. Margaret, 5873

Inigo Jones's staircase in Ashburnham House, 6242

Rodin's fine monument to the Burghers of Calais, 4648

arms, in colour, 4991

Westminster Abbey, noble building which breathes the history of England, 4225, 5745, 5874

built originally by Edward the Confessor, 707, 840

Coronation Stone brought from Scotland by Edward I, 952

Henry VII Chapel, 1073, 5873, 6740

Livingstone buried there, 3004

memorials and tombs, 951, 956, 1210

rebuilding in reign of Henry III, 836

Spenser's burial there, 742

Pictures of Westminster Abbey

coronation of George VI and Queen

Elizabeth, 1829

flag, in colour, 6968

funeral of Henry V, 959

Henry III, tomb, 837

Henry VII Chapel, 4233, 4236, 5876

13th century corbel, 4765

views, 4232, 5880, 6238

Westminster Bridge, first to be lighted

with gas, 3333; view, 1221

Westminster Cathedral, built in Byzantine style, 5742

J. F. Bentley its architect, 4230

exterior, 4237

Westminster Hall, architecture, 5874

beautiful hammer-beam roof, 6237

building of the roof, 6608

Charles I tried in it, 1208

roof damaged by death-tick beetle, 6333

George V before his Parliament, 1827

Westminster School, arms, in colour, 4989

Westmorland, English county, 215

places in, 7173; road map, 7145

Westphalia, Peace of, Switzerland acknowledged independent, 4672

Thirty Years War ended by, 4294

West Virginia, American eastern State, deep oil well, 3083

State flag, in colour, 6971

Wetherbee, George, Cuthbert the

Shepherd Boy, painting, 1359

Wexford, capital of Co. Wexford, Ireland, Cromwell captures it, 523

view of River Slaney, 3072

Wey : see dry measure, and wool measure, 7069

Weyden, Roger van der : see Van der Weyden

Weyman, Stanley, English historical novelist, 3712

Weymouth, port of Dorsetshire, Black

Death's first victim in 1348 : see page

3637

Weyprecht, Carl, Austrian Arctic explorer, 4434

Weysenhoff, Polish novelist, 5029

Whale, species, habits, and characteristics, 2145

ambergris production, 2149

oil and whalebone, 2148, 5860

swimming speed, 6852

whaling industry, 6549

whaling in remote British possessions, 3558

whales of various kinds, 2147, 2151

Whale, constellation, 3854

Whale-headed stork, 3868

Whales, Bay of, Amundsen sets out for

South Pole from there, 6556

Whale-shark, large animal, 5227

Wharton, Edith Newbold, American

writer, 4334

What-are-these-things? game, 6058,

6177

What do you think? rhyme, music, and

picture, 4064

What-is-it? game, 2116

Wheat, its story, 1325, 1571

best wheat grown in Canada, 2323, 1578

Britain grows only one-fifth of what

she needs, 2428, 6004

British Empire and Commonwealth production, 2074

flour, and its food value, 2427

nourishing power, 2428, 2441

number of grains to bushel, 1698

problem of world shortage, 576, 2427

production, 1576

rotation of crops, 697

Russia's great harvest, 5900

rust disease, 1576

United States' production, 3680

why does the farmer grow clover one

year and wheat the next? 2174

Pictures of Wheat

binding and loading, 1579

cutting a field in Australia, 2454

Dr. Saunders with first grains of Marquis wheat, 1324

harvesting machines, Texas, 3693

on prairies of Canada, 1577

picture-story of a grain, 1570

reaper at work in England, 1577

several varieties, 1325

threshing-machine, 1571

For production in various part of the

world see descriptions and plant maps

of countries

Wheat, Cargo of, story, 285

Wheat, migration, 3026

bird, in colour, 2897

route of migration, 223

Wheat-grass, in colour, 584

Wheat midge, enemy of wheat, specimen, 6087

Wheat rust, picture-story, 1573

Wheatstone, Sir Charles, English electrical engineer, pioneer of the telegraph,

1602, 1728, 1841

portrait, 1843

Wheel, wheels that turn, trick, with

picture, 6671

why cannot we see the spokes when it

goes very fast? 6234

why does a man tap the wheels of a

train at the station? 5252

Wheel animalcules, under microscope,

1915

Wheelbarrow, why has it only one

wheel? 4998

Wheeler, Charles Thomas, English

sculptor, 4768

Wheel of Life : see Zoetrope

Wheelwright, Roland, his paintings, Don

Quixote, and Maritornes, 3779

Enid and Geraint, 6945

Joan of Domremy, facing 373

Whelk, characteristics and food, 6583

hermit crab's use of shells, 5473

saws through oyster shell, 5096

egg capsules, 6585

palate under microscope, 1916

shells, 6581, 6585; in colour, 1177

When I was a little boy, nursery rhyme

and picture, 102

When little Sammy Soapsuds, nursery

rhyme and picture, 231

When the Fire Went Out, story and

picture, 2761

Where-is-it? game, 1626

Whey : see Milk

Whig Bible, what it is, 5734

Whigs, old name for the Liberals, 2137

Whimbel, bird, 3875; in colour, 2768

Whin : see Furze

Whinberry : see Bilberry

Whinchai, migrations, 3026

bird, in colour, 2768

male bird, 3019

Whippet, breed of greyhound, 669, 667

Whipping-post, from old Newgate

Prison, 4864

Whip-shaped chordaria, seaweed, 3414

Whipsnade Zoo, park freedom of

animals, 3395

Whirligig beetle, its paddle under micro-

scope, 1911

Whirlpool, how to make one in a

tumbler, 2117

what makes it? 6104

Whirlwind, waterspout caused by, 2619

Whistle, that a boy can make, and

picture, 4095

why does the whistle change as the

train comes nearer? 2296

Whistler, James Abbott McNeill, Anglo-

American painter and etcher, 2930,

3288

his portrait of his mother, 2927

White Girl, painting, 2927

Whitby, fishing port in the Yorkshire

North Riding, 2778

meaning of name, 596

view of harbour, 1832

Whitby Abbey, 962

White, Joseph Blanco : see Poetry Index

White, Edwin, his painting, Pilgrim

Fathers on Mayflower, 3793

White, Henry Kirke, English poet, 1138

White, all colours contained in, 1920

light not absorbed by it, 2920

White admiral butterfly, egg, caterpillar,

and chrysalis, in colour, 6205

White ant : see Termite

Whitebait, what they are, 5102

Whitebeam tree, what it is like, 4038

with flowers and leaves, 4155

White blood cells : see Blood cells

White bottle : see Bladder campion

White bryony, what it is like, 4289

- flower, 4290; wild fruit, in colour, 3669
 White-collared mangabey, monkey, 161
 White clover, or Dutch clover, 4415, 4419
 White corpuscles : see Blood cells
 White dryas, feathered seed, 947
 Flower, in colour, 5642
 White Ensign, what it is, 6962
 flag, in colour, 6965
 Whitefield, George, English preacher, 5450, 5453
 Whitehall, its famous buildings, 4230
 Charles I beheaded in, 523, 1203
 Charles Stuart's window, 4864
 Inigo Jones's Banqueting Hall, now United Service Museum, 4227, 4233
 White-headed bell bird, 3147
 White horehound, 5023
 flower, in colour, 5142
 White Horse, flag emblem of the Saxons, 6961
 White Leghorn fowl, 4253
 White-letter hairstreak butterfly, with egg, caterpillar, and chrysalis, in colour, 6204
 Whiteley, William, founder of great London store, 4109, 4102
 White line, how did the white line on the road begin? 5864
 White meadow saxifrage, flower, in colour, 4420
 White mica, in lump of slate, 2006
 White oryx, animal, 1403
 White poplar, description and uses, 3788
 White rot : see Marsh pennywort
 White Russia : see Byelo-Russia
 White Sea, deep gulf in the coast of Arctic Russia, 6014
 Chancellor finds way to Archangel, 4600
 White shark, its terrible jaws, 5227
 White Ship, son of Henry I drowned in its wreck, 718
 White Shirt Land, Greenland's first name, 3027, 6432
 White star of Bethlehem, in colour, 4907
 White Stork, bird, 3868
 young in nest, 2639
 Whitethorn : see Hawthorn
 Whitethroat, characteristics, 3137
 in colour, 2900, 3023
 White wagtail, in colour, 2767
 White water-lily, what it is like, 6007
 flower, 6007
 White willow, in basket-making, 3787
 White Wyandotte fowl, 4253
 Whiting, William : see Poetry Index
 Whiting, fish, in colour, 5099
 Whitman, Walt, American poet, 4204
 See also Poetry Index
 Whitney, Eli, American inventor, discoverer of the cotton-gin, 172, 1838, 5943; portrait, 5939
 Whittable, port in Kent, oyster dredging, 5731
 Whitsunday, date on which it falls in Scotland : see Quarter Days, 7069
 Whittier, John Greenleaf, American poet and reformer, 4203; portrait, 4201
 See also Poetry Index
 Whittington, Dick, and his cat, story and picture, 33
 Whittle, Sir Frank, turbo-jet engine invention, 5950
 Who-are-these-people? game, 4216, 4342
 Who comes here? rhyme picture, 5918
 Who Killed Cock Robin? rhyme pictures, 606, 607
 Whooper swan, 3752
 Whorled chrysochloa, in colour, 3416
 Whortlebury : see Bilberry
 Whydah, bird, specimens, 2893
 long-tailed, 2904
 Why-is-it? game, 3232, 3350
 Why the Convulvulus Twines, story, 4734
 Why the Cornfields Smile, story, 4362
 Why the General Went Back, story, 3014
 Why the Tiger has Marks on his Face, story, 4611
 Why the Wolf was Brave, fable, 3624
 Wickham, H. A., brought seeds of rubber from Brazil, 1168
 Wicklow Hills, Ireland, 3061
 Widgeon, wild duck, 3756
 in colour, 2768
 Widow Capet, French Revolutionaries' name for Marie Antoinette, 4044
 Wieland, Christopher, German poet and novelist, 4697
 Wieliczka, Poland, salt mines, 1540, 5030
 rock salt mining, 1543, 1544
 Wife's Bible, what it is, 5734
 Wight, Isle of, island off the coast of Hampshire, geology, 1754
 Jutes, settle there, 592
 places in, 7160
 scenes, 1590, 1592-93
 seen from the sea, 344
 road map, 7116
 Wig tree : see Sumach
 Wilberforce, William, English orator and anti-slavery leader, 3242
 seat in Parliament, 1585
 W. Lloyd Garrison visits, 3238
 Wilcox, Ella W. : see Poetry Index
 Wild : when coming before name of plant or animal see under specific name as Wild Cherry : see Cherry, wild
 Wild, Frank, Antarctic explorer, 911, 6561
 Wild Hyacinth, or Bluebell, in colour, 4905
 Wilde, Oscar, Irish writer and poet, 4081
 Willdenvey, Herman, Norwegian poet, 4942
 Wilder, Thornton Niven, American writer, 4334; portrait, 4331
 Wilhelmina, Queen, of Holland, 5530
 Wilkes, Charles, American Antarctic explorer, 6550, 6549
 Wilkes, John, Middlesex represented by in people's struggle for freedom, 1585
 Wilkie, Sir David, Scottish painter, 2545
 Knox preaching before Mary Queen of Scots, painting, 2554
 Village School, 4959
 Wilkie, W., his painting, Washington Irving searching for records of Columbus, 2975
 Wilkins, Sir Hubert, Arctic and Antarctic explorer, 6444, 6562
 Wilkins, William, National Gallery built by him, 4228
 Will, movements' relation to, 114
 fight with imagination, 3715
 Willard, Emma, author of *Rocked in the Cradle of the Deep*, 1264
 See also Poetry Index
 Willesden, London, oil-drilling equipment, 3086
 Willett, William, Summer Time Act due to his efforts, 4775, 5984
 William I, the Conqueror, first Norman king of England, 707, 3149
 abbey at Caen founded, 5746
 arms, 4983
 building of Tower of London, 4226
 Pictures of William I
 Bayeux Tapestry pictures, 709-716
 coronation, 706
 death in Rouen, 706
 flags, in colour, 6968
 Harold's meeting with him, 707
 riding into battle, 3149
 William II, king of England, attitude towards Church, 6921
 death in New Forest, 718
 William III (of Orange), king of England, 1214, 5530
 arms of Nassau added to English, 4984
 Rembrandt's portrait, 1562
 flag, in colour, 6968
 William I, German Emperor, 4048, 4299
 William II, German Emperor, 4300
 William I, the Silent, prince of Orange, founder of Dutch liberty, 3880, 5527
 statue at The Hague, 5539
 William II, of Orange, and his wife, by Van Dyck, 3528
 William Cloudslee, story, 1391
 Williams, Alfred : see Poetry Index
 Williams, Charles, British writer and poet, 4084
 Williams, Sir Evan Owens, architect and engineer, 6608
 Empire Pool, Wembley, designed by, 6613
 Williams, Harry, English composer, 1268
 Williams, John, English missionary, 1138, 1137
 Williamson, Henry, English novelist, 3714
 William Tell, play by Schiller, 4698
 See also Tell, William
 Will-o'-the-Wisp, what is it? 8346
 Willoughby, Sir Hugh, English navigator and Arctic explorer, 776, 4600
 portrait, 4597
 Willow, different kinds and uses, 3787
 tree, leaves and flowers, 3916
 used in making cricket bats, 4261
 See also under names of species
 Willow herb, members of family, 4782
 marsh willow herb, in colour, 6127
 Willow-pattern plate, story, with picture, 35
 Willow warbler, in colour, 2900
 two young birds, 3139
 Willow wren, nest with eggs, 3019
 Wills, W. D. & H. O., beginning of the tobacco firm, 4108
 Wills, William John, Australian explorer, 6070; last days, 6067
 Willson, T. L., Canadian acetylene gas pioneer, 1228
 Wilson, Dr. Charles T. R., Scottish scientist, 6318
 Wilson, Dr. E. A., English Antarctic explorer, 6552, 6558, 6559, 6560
 Wilson, Margaret, her martyrdom, 3012
 Wilson, Marjorie : see Poetry Index
 Wilson, Richard, Welsh landscape painter, 2302
 Afternoon on the Lake, painting, 2304
 Wilson, Samuel, the original Uncle Sam, 5735
 Wilson, Woodrow, American statesman and president 1913-21 : see 3796
 his idea for League of Nations, 1824, 2479, 3834
 Panama Canal opened, 2173
 portrait, 3791
 Wilton Diptych, in National Gallery, 1924
 Wilton House, Inigo Jones's bridge, 6252
 Wiltshire, English southern county
 archaeological discoveries, 6998
 places in, 1713; road map, 7114
 Wimhurst machine, electrical spark producer, 238
 Winchester, Cinque Port in Sussex, view of church, 1593
 Winchester, capital of Hampshire, cathedral, 5368, 5866, 5874
 Hospital of St. Cross, 2240
 Roman relics, 590
 Winchester School, 6237
 woollen factory built by Romans, 800
 Pictures of Winchester
 arms, in colour, 4991
 cathedral, west front, 5882
 church of St. Cross, 5876
 King Alfred's statue, 1591
 school arms, in colour, 4989
 William of Wykeham at work on cathedral, 950
 Winkler, Dr., excavations at Carchemish, 6871
 Wind, effect on climate, 2620
 effect on Earth's surface, 641, 2375
 monsoon, 3744
 mythological names, 3519
 pollen carried by it, 832
 rain caused by the winds, 2867
 toy to measure it, with pictures, 749
 Wonder Questions
 does a strong wind slow down a steam ship? 6595
 how is it used for land transport? 3278
 is it ever too strong for an aeroplane? 5062
 what is a wind scale? 6856
 what is the Helm Wind? 2415
 what is the wind like on a mountain top? 4394
 what makes the wind whistle? 184
 where does the wind go when it does not blow? 6347
 how a boat sails against it, 3278
 moving, moving since Creation, 112
 See also Trade Winds
 Wind and the Sun, fable, 4245

Wind-driven petrol pump, 4692
 Windermere, Lake, on the border of Westmorland and Furness, 1835
 Windhoek, capital of the South-west Africa Protectorate, 3188
 Wind in the Willows, *The*, story by Kenneth Grahame, 404
 Windlass, Chinese, 6349
 Windmill, uses in Holland, 5524
 on Sussex Downs, 1591
 Window, importance in Gothic architecture, 5869
 stained-glass windows and their designers, 450, 6731
 taxation of windows, 1947
 why we should sleep with it open, 1323
 York Minster and its stained glass, 5872
 why are old windows bricked up? 5373
 why does a noise break it? 4891
 Windpipe, what and where it is, 1320
 Windsor, Berkshire town, 5874, 6235
 Portuguese alliance with Edward III made there, 5398
 arms, in colour, 4991
 castle from river, 6245
 St. George's Chapel, interior, 76
 Windward Islands, British West Indian group, 3555
 cotton factory on St. Vincent island, 3555
 flag, in colour, 6967
 view of St. George's, Grenada, 3555
 general map, 7030; in colour, 7103
 Wine, does not contain much iron, 943
 Winfrid: see Boniface
 Wingate, General Order, leader of Chin-dit forces in Burma, 2814
 Winged delessaria, seaweed, 3414
 Winged Victory, *The*, Greek sculpture, 4275
 Wingless Victory, Temple of, at Athens, 5498, 5506
 Wing shell, 6580
 Winkelried, Arnold von, Swiss legendary hero in the 14th century wars with Austria, 4672
 Winnipeg, capital of Manitoba, 2196
 Parliament Buildings, 2330
 Winsford, Cheshire, salt mine, 1545
 Winston, Charles, work in Glasgow Cathedral, 6731
 Wint, de: see De Wint
 Winter, reason for shorter days, 2742
 why it is cold, 269
 where do the flowers go in winter? 6002
 stars in winter as seen by ancients, 2994
 Winter aconite, flower, 6384
 Winter-green, description, 6011
 flower, 4778
 Winter moth, habits, 6200
 Winter's Tale, *A*, by Shakespeare, story of the play, 6051
 Winterthur, Swiss engineering centre near Zurich, 4673
 Winther, Christian, Danish poet of country life, 4939
 Wire, for ocean cable, 1604
 amount used for telephones in America, 1974
 use in sounding sea-depths, 2413
 Wireless, telegraph and telephone, their story, 2089, 3359
 arc lamps invention, 3364
 B.B.C., description of, 5107
 beam waves, use in radar, 2464
 coherer, 3362
 development for commercial use, 1726
 first message across Channel and Atlantic, 2092
 further uses of wireless, 855
 photographic system of receiving messages, 2100
 radar, 108
 Ruhmkorff coil, 2096
 ships, use of wireless, 855, 2093, 3575
 speed of a wireless signal, 107
 valves for transmission and receiving, 2096, 2218, 3364
 waves, description and lengths, 108, 2093
 waves, generation and detection by Hertz, 2092
 waves, speed, 2098
 weather forecasts sent to ships and aeroplanes, 2100
 wireless compass, 3364
 could a wireless wave go round the Universe? 6724

Pictures

airport operators at work, 437
 Broadcasting House, series, 5111-19
 Brookman's Park transmitting station, 2089
 coils at European wireless station, 2091
 direction aeriels, 2095
 Dorchester beam station, 2097
 Droitwich station, 2094
 Eiffel Tower broadcasting, 2099
 electrical discharge at a station, 481
 Marconi House aeriels, 2094
 Poona, India, transmitting valves, 2091
 Rugby wireless station, 2095
 Salisbury, Southern Rhodesia, wireless station, 2095
 waves resemble ripples in pond, 2090
 wireless cabin of liner, 2093
 See also British Broadcasting Corporation, Radar and Radio
 Telephony
 Wire, Steel, use in manufacture of needles, 4644
 Wireworm, damage to crops by, 6332
 Wisby: see Visby
 Wisconsin, American province, State flag, in colour, 6970
 Wise and Foolish Fairies, story, 3740
 Wise Men, journey to Bethlehem, 5590
 Wise Men of Greece, who were the Seven Wise Men of Greece? 6348
 Wisest Fool in Christendom, *The*, said of King James I, 521
 Wishart, George, teacher of Knox, 7056
 Wish-bone, how to make a jumping frog from a wish-bone, 1744
 Wishing Chair, Giant's Causeway, Ireland, 2005
 Wistaria, growing in Japan, 6626
 Wistful, Owen, American writer, 4335
 Wisting, Oscar, at South Pole, 6553
 Witan, Saxon assembly, 587
 Witches' gowan: see Globe-flower
 Witch's Ring, story, 412
 Wither, George: see Poetry Index
 Wiltwatersrand: see Rand
 Wizard's pocket-handkerchief, trick and picture, 753
 Wizard's Wand, tricks, 631
 Woad, description, 2938
 found on heaths, 5023
 flower, in colour, 5143
 plant used in dyeing, 2941
 Woburn Sands, Bedfordshire, view of woods, 1833
 Woden, King of the Gods, 594
 sacred oak felled by Boniface, 1386
 Wednesday gets its name from, 2775, 5222
 sending out ravens, 5222
 Woffington, Peg, British actress, portrait by A. Pond, 2421
 Wöhler, Friedrich, German chemist, acetylene gas pioneer, 1228
 Wohlgemuth, Michael, German painter 1188
 Wolf, Alaskan wolf biggest of the dog tribe, 538
 distribution in Europe, Asia, and America, 539, 3030, 4308
 dogs descended from wolves, 663
 race with the wolves, story, 6075
 different varieties, 536, 541, 2394
 pack hunting for food, 539
 Romulus and Remus, sculpture, 1784
 Wolf, game, 4463
 Wolf and the Kid, fables, 3866, 4116
 Wolf and the Lamb, fable, 3991
 Wolf and the Stork, fable, 3743
 Wolf Charmer, painting by J. La Farge, 3296
 Wolfe, Charles: see Poetry Index
 Wolfe, James, English general, 1330, 2319, 4126
 looking down on Quebec, 1331
 Wolfenbüttel, German town, the Marienkirche, 6372
 Wolffia arrhiza, smallest flowering plant in Britain, 1068
 Wolfhound, Alsatian, dog, 663
 Wolf in Sheep's Clothing, fable, 3992
 Wolframite, mineral, in tungsten filament, 1099
 Wolf-spider, its 4000 species, 5599
 picture, 5593

Wolf that Came in the Night, story, 5959
 Wolf who Met a Man, story, 5094
 Wolf who Repented, fable, 3821
 Wolsey, Thomas, English cardinal and statesman, born in Ipswich, 212
 Hampton Court Palace, built, 6237
 life written by George Cavendish, 1477
 opposition to Henry VIII's marriage with Anne Boleyn, 1076
 Shakespeare on his fall, 6531
 arrives at Leicester Abbey, 1072
 at Westminster, 1072
 Wolverine: see Glutton
 Woman, her brain compared with man's, 1693
 extension of franchise to, 1585, 1825
 factory work and its effect on her children, 2430
 Mohammed regarded women as little more than slaves, 2232
 success of women as novelists, 2348
 Woman Against a King, story, 5954
 Woman and the Hen, fable, 4246
 Women of Stanley Harbour, story, 5582
 Wombat, animal, 2395

Wonder

The Wonder Questions in this section of the Encyclopedia are indexed under the important words of the question and are the last entries, with black page numbers in every case.

Wonder Book, *The*, by Nathaniel Hawthorne, 401
 Wonderful Day, by Arthur Mee, quotation on the Moon, 3486
 Wonderful Horse, *The*, story, 3861
 Wonders of the World, Seven, 4885-88
 Wondrous Wise, rhyme and picture, 6906
 Wonersh, Surrey, view, 1590
 Wonga-wonga, dove, 4123
 Wood, Derwent, English sculptor, his sculpture, War Memorial figure, 5011
 Wood, bad heat conductor, 2173, 5321
 composition, 3544
 heat and cold's effect, 1046
 how to find our way in a wood, 6177
 lead pencils made of, 2039
 making a collection of woods, 3841
 paper made of pulp, 1294
 pulp: see Wood pulp
 timber trees, 3785

Wonder Questions

what makes a knot in a piece of wood? 1305
 why does glue hold wood together? 3234
 why does heat crack it? 5934
 why does wood rot away? 4136
 why does wood warp? 2919
 used in manufacture of Bowls, 4264
 See also Timber and forest

Wood anemone, what it is like, 4782
 flower, 4778
 Wood ant, insect, in colour, 5714
 pictures, 5961, 5965-6
 Wood betony, what it is like, 4782
 flower, 4778
 Woodbine: see Honeysuckle
 Wood-bag, larva, magnified, 1915
 Woodcarving, beautiful art that was killed by machine work, 6732
 Germany's real national art, 1135
 examples from Italian churches, 6735, 6736, 6739
 medallion portraits, 6733
 Woodchester, Gloucestershire, old mosaic paving, 6732
 Woodcock, bird, young carried between its legs, 3876
 bird, 3875; in colour, 3023
 Wood crane's-bill, what it is like, 4782
 flower, in colour, 4905
 Wood, cudweed, flower, in colour, 5142
 Woodcuts, description of early method of printing, 1512
 Woodcutters, painting by John Linnell, 3775
 Woodes Rogers, Captain, Alexander Selkirk rescued by him, 2330
 Woodforde, Parson James, diary kept by, 1852
 Wood forget-me-not, plant, 4731
 flower, in colour, 4908
 Woodgate, Tom, boatman and friend of Thomas Hood, picture to poem, 1595

Wood germander, flower, in colour, 4908
Woodhead Tunnel, under Mersey river, length and age, 6595
Woodhenge, ancient British wood circle, 6997
Wood horsetail, flowerless plant, 3408
Woodland flowers, 4779, 4778-79 series, in colour, 4905-08
Woodland scenes, 83, 2370, 2372-2374
Woodlark, distribution and characteristics, 3016
 bird, in colour, 3021
 with young, 3019
Wood loosestrife : see *Yellow pimpernel*
Woodlouse, varieties and habits, 5480
 picture, 5479
Wood meadow grass, 3306, 3307
Wood melic, grass, 3305
Wood nemobius, insect, in colour, 5713
Woodpecker, characteristics, habits, food, and nest, 3253, 4039
Pictures of Woodpeckers
 downy, in colour, 3261
 feeding its young, 3257
 great green, group on tree, 3257
 great spotted, in colour, 2768, 3266
 green, in colour, 2899
 green, looking out from nest, 3257
 lesser spotted, in colour, 3021
 red-headed, in colour, 3143
Wood-pigeon, food, 4123, 6855
 in colour, 2768
 pair, 4123
Wood-pulp, Canada's production, 2323
 for paper-making, 1294, 5488
 Great Britain's import, 5264
 See also *Paper*
Woodruff, what it is like, 4782
 sweet, flower, in colour, 4906
Woodsia fern, species, 1797
Wood sorrel, member of Crane's-bill family, 4782
 leaves' movement, 585, 586
 expels its seeds, 946
 flower, 4778
Wood spurge, flower, 4779
Wood-stork, habits and food, 3872
Wood strawberry, flower, in colour, 4906
Wood swallow, home and food, 3025
Wood tiger beetle, in colour, 6336
Wood vetch, description, 5518
 flower, in colour, 5642
Wood violet, flower, in colour, 4907
Wood warbler, 2896
 in colour, 2766
Wood white butterfly, with egg, caterpillar, and chrysalis, in colour, 6204
Wood-worm, boring beetle, 6333
Woody nightshade, what it is like, 4290
 flower, in colour, 4285
 wild fruit, in colour, 3671
Wool, the story of wool, 799
 ancient Egyptians made clothing of it, 427
 Australia's trade, 799, 2446, 2570
 Cartwright makes combing machinery, 5942
 Commonwealth's production, 6005
 England and beginning of wool trade, 954, 3383, 5526
 export value of British cloth, 1278
 Italy's production, 4914
 production, 2074
 scientific sheep-breeding results, 1278
 statistics of British trade, 5282
 structure that makes weaving possible, 1277
 Yorkshire's industry, 214, 1278
 14th-century Flemish workers, 951
 how we obtain and manufacture wool, picture series, 801-811
 packed on Nile banks, 798
Woolley, Sir C. Leonard, excavations at Ur, 6871
Woolsack, scarlet-covered cushion filled with wool forming the seat of the Lord Chancellor as Speaker of the House of Lords, 2300
Wool weight : see 7089
Woolworth Building, New York, skyscraper, 3805
Woolly aphid, life-story, 5365
Woolly codium, seaweed, 3416
Woolly-headed plume-thistle, what it is like, 5268
 flower, in colour, 5396

Woolly rhinoceros, animal of Pleistocene Age, 1881
Woolly Wolf, 541
Worcester, Marquis of, English inventor, 2746, 3208
Worcester, capital of Worcestershire, cathedral architecture, 5866, 5871
 home of famous Worcester china, 6737
 arms, in colour, 4991
 cathedral, 1713, 5881, 7123
 cathedral crypt, 5867
 Edgar Tower, 1714
Worcester, battle of, fought in 1651 between Charles II and Cromwell, 1210
Worcester College, Oxford, arms, in colour, 4988
Worcestershire, English midland county, places in, 7174
 road map, 7123
Worde, Wynkyn de : see *De Worde*
Words, mystery of words, 4207
 meaning of Chinese, 6501
 using words without thinking of their meaning, 1336, 1360
 word game, doublets, 4710

Wonder Questions

are new words made for new things? 6355
 are there families in words? 563
 can we think without words? 560
 how many do we use? 61
 how many words has the Bible? 5251
 how many words has the English language? 5251
Wordsworth, Christopher, Master of Trinity College, Cambridge, 2471
Wordsworth, Dorothy, sister of the poet
Wordsworth, 2472
 Nature notes from journal quoted, 2473
 portrait, 2471
 See also *Poetry Index*
Wordsworth, William, poet, 2471
 on inspiration, 3958
 on vision, 1360
 talking to children, 2475
 watching Hartley Coleridge play, 3955
 See also *Poetry Index*
Work, relation to heat, 5442
Worker, laws protecting British, 6255
Workmen, skilled an unskilled, work and payment, 5638
World, family of man, 11, 87
 commercial future, 2032
 facts and figures, 7059
 history revealed by excavations, 6859
 map, first drawn by Anaximander, 914
 other worlds, 12, 3482
 population, 2042, 5863, 6003, 7059

Wonder Questions

could we reach another world? 2539
 how many worlds are there? 5248
 is the world still growing? 2042
 what is it like at the Poles? 6846
 why is the world light when the Sun is behind the dark clouds? 4392
 will the world's food supply ever run short? 6230

Maps of the World

area known at different dates, 95
 carried on shoulders of Atlas, 217
 early Greek map, 915
 extinct animals of long ago, 224
 food plants & fruits, cereals, 221
 globe as we know it, 91
 in colour, 7078
 insects that help and hinder, 220
 migration of animals, 222, 223
 paths of the Sun's eclipses, 816
 proportion of Water to Land, 93
 showing spread of word Mother, 562
 time map, 812
 transport, 94
 See also *Earth and countries*
World Health Organisation, of United Nations, 6487
World War, First, story of, 1707
 Allies' victory in November 1918, 1709
 British and Empire casualties, 1710
 Canada's part in, 2321
 casualties in, 1707
 cost, 1710
 effect on France, 4050
 Germany's part in, 4300
 International debts, 1824
 League of Nations founded, 4748

National Debt, 1710
Newfoundland's part, 2326
 outbreak of, 1707
 peace treaty that ended, 4300
 Poland's condition during, 5028
 Treaty of Versailles, 4050
 Turkey's entry, 6135
 United States enters, 1708
 United States' part, 3798
World War, Second, story of, 1941
 airships used by United States, 4452
 Canada's part, 2322
 Chindit forces led by General Wingate, 2814
 coal production of Allies and Germany, 2336
 cost in final year, 4653
 France's part, 4050
 Germany's part, 4304
 gold reserves at end, 5858
 Italy's part, 4788
 Kachins of Burma, and part taken, 2814
Newfoundland's part, 2326
 radar development, 5128
 radar uses during, 2464
 Russia's part, 5902
 Singapore invaded by Japanese, 3423
 United States' part, 3799
 Evacuees, painting by Ethel Gabain, 1941
 June, 1944, the landing in Normandy, by Barnett Freedman, 1947
 Women at War, by Dame Laura Knight, 1943
Worm, characteristics and food, 6826
 structure, 451, 1568, 6823
 how is it that a worm lives when cut in two? 929
 what does a worm know? 812
 various species, 6825, 6827
Worm gear, in mechanics, 6350
Worms, one of the oldest German Rhine cities, 5746
 cathedral, 5751
Worms, Diet of, 7055
Wormwood, in colour, 5144, 5644
Wormun, Grey, British architect, R.I.B.A. Headquarters, London, 6615
 Worsted, used in making a cricket ball, 4262-63
Worthing, Sussex, Saxon church, 5865
Worthing, Sussex, oil-drilling machinery, 3086
Wotton, Sir Henry : see *Poetry Index*
 would have, William, English pioneer of the lifeboat, 5950
Wounds, improved treatment of, 2504
 white blood cells' healing work, 1059
Woundwort, flower, 4663, 6007
 in colour, 4287, 4663
Wrack, knotted seaweed, 3415
 serrated seaweed, 3416
Wrasse, fish, ballan wrasse in colour, 5097
 cuckoo, in colour, 5098
 three-spotted, in colour, 5097
Wreath shell, 6581
Wreck of the Hesperus, picture to poem, 5171
Wrekin, The, hill in Shropshire, 471
Wren, Sir Christopher, English architect, 4227, 6242, 6605

Pictures of Wren

gazing at St. Paul's, 4226
 portrait, with father, 4133
 showing drawings to Charles II, 4225
Works of Wren
 buildings, 6238-39, 6247-48, 6250-51
 his model of St. Paul's, 4863
 Temple Bar, 4862
Wren, bird, characteristics, and food, 3025
 how it became king, story, 1890
 nest of willow wren, 3019
 species, in colour, 2899-2900, 3143, 3261
Wrestler, statue from Herculaneum, 5010
Wright, C. S., English Antarctic explorer, 6560
Wright, Dr., existence of Hittite inscriptions first suspected by, 6871
Wright, Frank Lloyd, American architect, 6611
 house in Illinois, designed by, 6616

Wright, Orville, American airman, inventor with his brother of the first successful engine-driven aeroplane, 24, 21 speed of his biplane's propeller, 6346 with brother in workshop, 23
Wright, Wilbur, American airman, invented the first successful engine-driven aeroplane with his brother Orville, 24, 21 with brother in workshop, 23
Wrinkle, how wrinkles come, 1430, 5370
Wrist, beat of heart usually tested by pulse in, 1196 bones described, 1694 muscles, 1810

WRITING

The following are actual headings of the chapters on Writing in the section of School Lessons

Learning to Write, 130
 Keeping a Diary, 259
 Without Mother's Help, 386
 Making a Cinema, 511
 Films and Advertising, 634
 Copying the Nursery Rhymes, 759
 Questions and Answers, 879
 The Twins Give a Party, 1001
 Big and Small Letters, 1127
 The Poetry Books, 1252
 Letters to Granny, 1375
 electric transmission of writing, 1470
 how to do magic writing, 6671
 how to keep a secret in writing, 383
 how to write with ink on wood, 2731
 methods and mediums in early times, 1292, 2034
 sent by wireless, 855
 who began writing? 921
 why is it hard to write on glass? 6599
 why will a pen and ink write on paper better than on a slate? 2921
 ancient Egyptian and other kinds, 685
 signs on rocks made long ago, 921
 stone tablet from Nineveh, 2033

See also Hieroglyphics

Writing and Reading, sculpture by Falconet, 4650
Writing Paper, how are the marks put into writing paper? 1552
Wroclaw, or Breslau, textiles town of Poland, 5030
Wrought iron, melting point: see melting points of metals, 7073
Wrybail, plover of New Zealand, 3874
Wryneck, bird, characteristics, 3256 picture, 3257; in colour, 3024
Wuchang, Chinese town, 6501
Wuchow, Chinese town, 6501
Wulfenite, mineral, 1304
Wurtemberg, German State, an inn, 4436 map, in colour, 7087 railway engine, 3510
Würzburg city in northern Bavaria, 6372
Neumünster, 6365
Wuthering Heights, Emily Brontë's powerful story, 3583, 4078
Wyant, Alexander H., American landscape painter, 3287
 Looking toward the Sea, painting by him, 3291
Wyatt, Sir Thomas: see Poetry Index
Wych elm, how it differs from common elm, 3786
Wycherley, William, English dramatist, 1611
Wycliffe, John, English religious reformer, 118, 956, 1076, 7054
 Morning Star of Reformation, 3759
 sends out preachers, 119
 The Trial of Wycliffe, by Ford M. Brown, 119
Wye, river of England and Wales: Chepstow Castle, 961 source near Aberystwyth, 1461 Symond's Yat, 1713
Wykeham, William of, bishop of Winchester; at work on Winchester Cathedral, 950
Wyllie, W. L., modern English painter, Pool of London, painting, 5137
Wyoming, American State, flag, in colour, 6971

X

Xanthos, his Harpy Tomb, 5500
Xanthus, figures from tomb in Acropolis of, in Lycia, 4032
Xavier, St. Francis, Spanish Jesuit missionary, 1390, 6618 who was he? 5738 portrait, 1385
Xenarescus, single-horned, beetle, in colour, 6336A
Xenon gas, an element, 4222
Xenophanes, Greek philosopher, 3650, 5182
Xenophon, Athenian soldier and historian, 1889 his army in sight of sea, 1886
Xerxes, Persian king, 4027, 6388, 6804 battle with Leonidas, 3123 fleet defeated at Salamis, 890 crossing Hellespont, 6799
Xiphias, sword-fish's classical name, 5230
X-rays, story of, 2585 electrons in tube, 2713 form of electric waves, 108 discovery by Röntgen, 6311 Coolidge tube, 2585 pictures of X-ray apparatus, 2585-93 pictures taken by X-rays, 2588-92

Y

Yacht Clubs, flags, in colour, 6976
Yachting: see Sailing
Yachts, sailing at Brighton, 345
Yak, animal, characteristics, 1155, 1159
Yakutsk, autonomous republic of U.S.S.R., 6010
Yale University, New Haven, Connecticut, 3684 view, 3683
Yallingup Cave, Western Australia, stalactites, 6845
Yalta, Crimea, meeting - place of Churchill, Roosevelt, and Stalin, view, 6028
Yalu River, river of eastern Asia, 6511
Yam, food plant, 1436, 2442 plant, 2441; in colour, 2685
Yanbu, small Arabian port, 6264
Yangtse Kiang, Chinese river, 2494, 6501, 6502, 6512
Yapock, water opossum, 2394
Yard, measure, origin, 4334
Yare, Norfolk river, Wherries, painting by Wilson, 2304
Yarkand, trading centre in Chinese Turkestan, 6510
Yarmouth, town and fishing port of Norfolk, 343
Yarrell's blenny, in colour, 5098
Yarrow, flower, 5019
Yassy, town of Rumania, 5783
 Church of Three Saints, 5783
Yates, Peter, British poet, 4084
Yatung, town of Tibet, 6512
Yawning, what makes us yawn? 6604 why is yawning infectious? 5128
Yeames, William Frederick, British artist, his pictures, Dawn of Reformation, 119
 Foundation of St. Paul's School, 1080
 When did you last see your father? 4207
Year, gradual lengthening of, 6547 how its length is determined, 268 length on other worlds, 3118
Yeast plant, its story, 1440 sugar turned into alcohol and carbon dioxide by it, 690, 1440 cells, 697
Yeats, William Butler, Irish poet and writer of plays, 4080; portrait, 4077 See also Poetry Index
Yellow, why does a thing go yellow with age? 2919
Yellow baboon, 164
Yellow-backed duiker, animal, 1403
Yellow balsam, what it is like, 5520
Yellow bugle: see Ground pine
Yellow hunting: see Yellowhammer
Yellow camomile: see Ox-eye camomile
Yellow cress, flower, in colour, 6129
Yellow deadnettle, or Archangel, member of Labiate family, 4782 flower, in colour, 4906
Yellow fever, cause and remedy discovered, 2626
 Gorgas's successful fight at Panama, 4869

Major Reed saluting men who offered their lives, 370
 stegomyia under microscope, 1916
Yellow figwort, flower, in colour, 5143
Yellow fleabane, flower, in colour, 5141
Yellow-fronted manakin, bird, in colour, 3141
Yellowhammer, bird, 2904, 2892 feeding habits, 6854 in colour, 2897 nest and eggs, 2903
Yellow-headed broadbill, in colour, 3143
Yellow-horned poppy, what it is like and where it grows, 5760 flower, in colour, 5644
Yellow iris, or Corn flag, 2689, 6008 flower, in colour, 6130
Yellow jacket: see Jarrah
Yellow loosestrife, what it is like, 6910 flower, in colour, 6129
Yellow marsh saxifrage, 5892 flower, in colour, 6127
Yellow meadow rue, member of Buttercup family, 5889 flower, in colour, 6127
Yellow monkey-flower, 6011 in colour, 6130
Yellow mountain saxifrage, 5519, 5621
Yellow mountain violet, 5518
Yellow oat grass, 2186, 3308
Yellow ox-eye: see Corn marigold
Yellow pimpernel, what it is like, 4781 flower, in colour, 4906
Yellow-rattle, description, 4416 flower, in colour, 4419 large, flower, in colour, 4663
Yellow River: see Hwangho
Yellow Sea, arm of the China Sea, 6501
Yellow skulpin, fish, in colour, 5100
Yellow spot: see Eye
Yellow Star of Bethlehem, 4780 flower, in colour, 4908
Yellowstone Park, American national park and game reserve in Wyoming, geyser and hot springs, 3808
Yellow vetchling, what it is like, 4416 flower, in colour, 4417
Yellow wagtail, bird, in colour, 3022
Yellow warbler, bird, in colour, 3262
Yellow water-lily, 8007 flower, in colour, 6129
Yellow-weed: see Dyer's rocket
Yellow woolly opossum, 2389
Yellow-wort, what it is like, 5268, 5267
Yemen, State of Arabia, 6265
Yenisei River, Central Siberia, 6014
Yeoman of the Guard, painting by Millais, 2556
Yevill, Somerset, St. John's Church, 1713
Yerba maté, Paraguay tea, 7016
Yew tree, description and uses, 3789 why are there so many yew trees in churchyards? 5491 fruit, in colour, 3667 tree, leaves, and flowers, 3547
Yezd, Persia, general view, 6396
Yezo: see Hokkaido
Yokohama, chief port of Japan, 6622 almost destroyed by earthquake, 6622 opened to foreign trade, 6620 street in, 6629
Yoritomo, the first of the Japanese Shoguns, 6618 tomb of, at Yokohama, 6622
York, historic capital of Yorkshire, 5872, 6240
 Constantine proclaimed emperor, 2883
 Mysteries of York, 857
 Roman relics, 590, 6732

Pictures of York

arms, in colour, 4991
 Guildhall, 6252
 Micklegate Bar, 6246
 Saint Mary's Abbey, 963
 the Shambles, 843
 view of the walls, 1833
 York Minster, 5875, 5881
Yorkshire, largest English county, 214 description of the moors, 463 places in, 7175 road map, 7138-40
 Yorkshire terrier, dog, 668
Yosemite National Park, U.S.A., sequoia trees, 3806
 Lower Yosemite Fall, 2500

- Vernal Falls, 3807
Young, Andrew, British poet, 4084
Young, Sir Hilton: see Poetry Index
Young, Dr. Thomas, British physicist and Egyptologist, 5817, 6860
Young, Sir William, architect who planned the War Office, 4230
Young Genius, picture to poem, 1719
Young Pretender, attempts to gain throne of England, 1214
Youth, its optimism, 3460
 Springtide of Life, sculpture by W. R. Colton, 4771
Youth Listens to Music of Love, painting by J. M. Strudwick, 3528
Youth of Hereward the Wake, story and picture, 4735
Ypres, Belgian city, 1708, 6371
 new Cloth Hall Tower and cathedral, 5657
 Menin Gate, 5657
Yser, river of Belgium, 5648
Ysselmeer, Holland, remaining lake area of Zuider Zee, 5524
Yturbe, Mexican patriot, 7004
Yuan-shih-kai, first president of Chinese Republic, 6504
Yucatan, State, Mexico, ancient Maya remains, 7007
 Indian mother and child, 7011
Yucca, plant, 1070
Yudhishtira, story of, 660
Yugoslavia, country in south-east Europe, 4555
 its formation, 1710
 flags, in colour, 6975
 peasant types, 89, 4566
 scenes, 4562-63
 Maps of Yugoslavia
 in colour, 7089
 physical features, 4557
Yukon, river of Canada and Alaska, 1404
Yukon Territory, Canadian north-western region, 2196
Yunnan, Chinese province, 6500, 6501, 6502, 6509
- Z**
Zadir Shah, King of Afghanistan, 6392
Zadkine, Ossip, Russian sculptor, 4896
Zagreb, formerly Agram, Yugoslavia, 4558, 4562-3
Zama, battle of, 4795
Zambesi, South African river, 6742
 explored by Livingstone, 3002
 Victoria Falls, 3312
 view above Victoria Falls, 2499
 Victoria Falls, 2500, 3313
Zambesi Bridge, great bridge which carries the Cape-to-Cairo railway over the gorge near Victoria Falls, 548
 pictures of its building, 557
Zanzibar, British East African protectorate, 3315
 British destroying last strongholds of slavery, 2079
 British resident's flag, in colour, 6963
 Universities' Mission Cathedral, 3320
 women washing their clothes, 3322
Zarco, Joao Gonçalves, Portuguese navigator, 772
Zarephath, village to which Elijah went, 2481
Zealand, largest Danish island, 5143
Zealand, Netherlands, province unites with Holland, 5523
 girl delivering milk, 5525
 villagers in church, 529
Zebra, 1899, 1895, 1897
Zebra shark, of Indian Ocean, 5228
Zeebrugge, Belgian North Sea port, 5648
Zebu, Indian humped cattle, 1154
Zella, port of British Somaliland, 3316
Zend-Avesta, Persian holy book, 6390
Zeno, Greek philosopher, 3124, 3119
Zephyr, Psyche and Zephyr, sculpture by Harry Bates, 5579
Zephyrus, mythological name for west wind, 3519
Zeppelin, Count Ferdinand, German inventor, 25, 4446
Zeppelin airships, use and abuse, 25
 raids during First World War, 1710
 pictures, 4447
Zero (absolute), point at which heat ceases to exist, 5318
Zeromski, Stephen, Polish novelist, 5029
Zeta Cancri, triple star, in different years, 3851
Zeus, god of ancient Greece, 3514
 famous statues, 4142, 4272
 temple at Olympia, 4028, 5497
 figures from temple, 4023, 4031
 See also Jupiter
Zhukovsky, Basil, Russian translator of Western poetry, 4816
Ziggurat, curious pyramidal towers of Babylonians, 5376
Zimbabwe, Great, Southern Rhodesia, ruins of early African civilisation, 3312
Zimmerman, Ernst, Come Unto Me. painting, 5435
Zinc, Australia's production, 2570
 British production, 6004
 Canada's production, 2324
 conductivity: see melting points of metals, 7073
 weight of a cubic foot, 7074
Zinc-blende, mineral, 1302
Zincite, mineral form of zinc ore, 1303
- Zinnia**, double, flower, 6383
Zion, Mount, view, 3465
Zircon, crystal found in granite, 1301
Zlin, Czechoslovakia, Bata shoe works, 4564
Z M C 2, American metal airship, in hangar, 4447
Zodiac, constellations of, 2993
 what is the Zodiac? 6344
Zoetrope, Horner's invention, 6703
Zog, Albanian ruler deposed by Italians, 6776
Zola, Emile, French writer and humanitarian, 4458
Zomba, Nyasaland, seat of government, 3314
Zone, of sphere, how to find cubic contents, 7076
Zoo guess, game and pictures, 755
Zoo Park, what is it? 3395
Zoology, Aristotle its founder, 1288
Zorah dwelling place of Samson's parents, 1487
Zorilla, José, Spanish poet, 5059
Zorille, Cape polecat, 793, 790
Zorn, Anders Leonhard, Swedish landscape and figure painter and etcher, 3398
 his paintings, A Singer, 3401
 Fisherman of St. Ives, 3403
Zorndorf, battle of, between Russians and Prussians during Seven Years' War, 4311
Zoroaster, ancient Persian philosopher, founder of the Parsee religion, 5675, 6387
 Cyrus adheres to his teaching, 6802
 figure, 5077
Zoser, king, Step Pyramid built at Sakkara, Egypt, 3165
Zoutlande, Holland, scene, 5536
Zucchero, Federigo, Italian painter, his portrait of Queen Elizabeth, 1077
Zuloaga, Ignacio, Spanish painter, 3400
 his painting, The Anchorite, 3404
Zulus, African native race, 3188, 89
 chiefs in leopard skins and feathers, 3193
 warriors, practising war dance, 3192
 woman having hair dressed, 3193
Zurbaran, Francisco, Spanish religious painter of the naturalistic school, 1308
 his pictures, Miracle of St. Hugo, 1311
 Saint Bruno and Pope Urban II, 1311
Zürich, Swiss industrial, commercial, and railway centre, 4672
Zutphen, Holland, battle of, 5535
 Sir Philip Sidney Memorial, 5539
Zuyder Zee, Holland, its reclamation, 5523
Zwingli, Ulrich, the leader of the Reformation in Switzerland, 4672, 4677
 his teaching, 7055





KS-056-390

